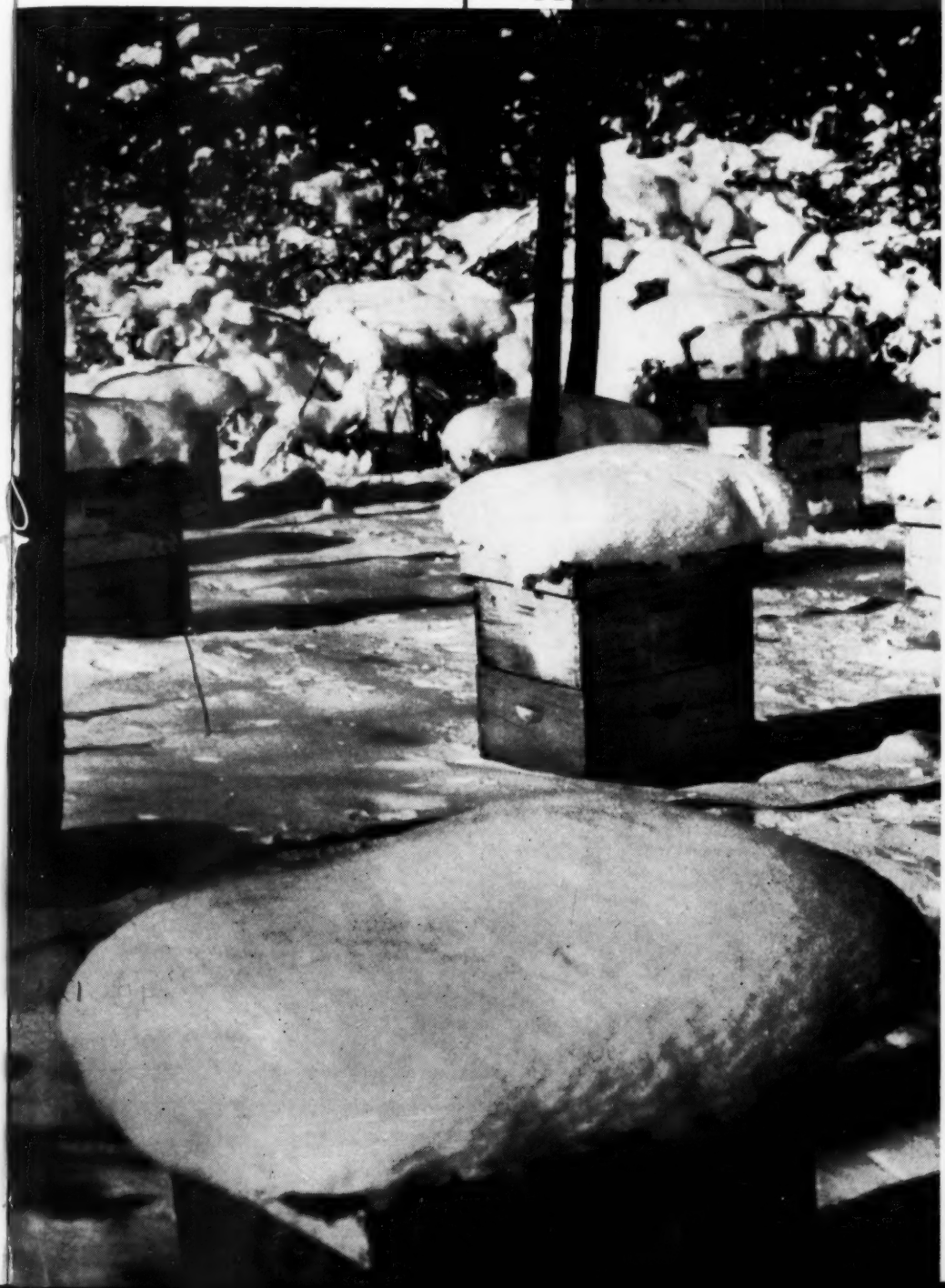
B & Z LIBRARY

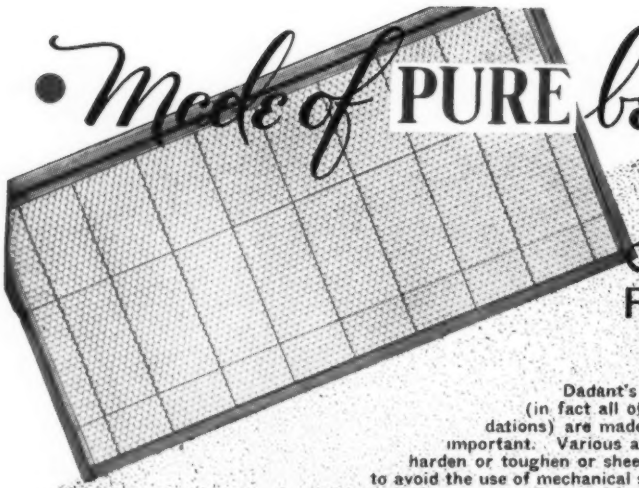
Gleanings in BEE CULTURE

OHIO
UNI
DEC

December 1954



Made of PURE beeswax



DADANT'S CRIMP-WIRED FOUNDATION

Dadant's Crimp-wired Foundation (in fact all of Dadant's Bee Comb Foundations) are made of pure beeswax. This is important. Various attempts have been made to harden or toughen or sheer up pure beeswax in order to avoid the use of mechanical supports such as are used in Dadant's Crimp-wired Foundation. However, remember beeswax is a basic raw material which goes into many products and has many uses.

Industry demands purity and refuses known mixtures. Remember, too, that the beeswax in comb honey whether in section or in bulk is actually a food because it is a part of the honey. Therefore, any mixing of other waxes with it is absolutely an adulteration.

Keep your beeswax safe for food use—worth the highest price on any market.

The Choice Of Expert Beekeepers

In heat or cold the hooks will hold

The crimped wires radiate shoulders of strength

Wires of special steel for greatest support

Accurate embedding so bees use every inch

Made only from pure beeswax

Refined for utmost cleanliness

Brilliant, natural color

Accepted at once by the bees

Cell walls a guide to perfect comb

Milled to exact measures

All cells just alike

Every sheet the same

Carefully and rigidly inspected

Securely and safely wrapped

Gives You LIFETIME COMBS

FIG. 1—Pure Beeswax: fleecy flakes, thin bars. FIG. 2—½% carnauba wax: large, clear, bright burrs. FIG. 3—1½% carnauba wax: smaller, bright burrs, tiny stars. FIG. 4—2% carnauba wax: large number burrs and stars. FIG. 5—5% carnauba wax: countless tiny brilliant crystals.

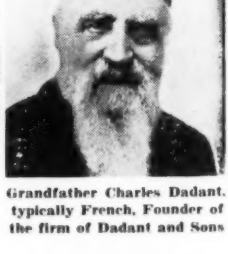
COMPARATIVE MICROPHOTOS of Pure Beeswax and four stages of wax adulteration.

USED 32 YEARS -- STILL THE BEST

Since 1921 we have used over 10 tons of Dadant's Crimp-wired Foundation. Of the thousands of combs drawn from this foundation some have had to be replaced on account of damage and disease but no replacement has been necessary because of foundation failure.

I regard Dadant's Crimp-wired Foundation as the best for brood and extracting combs when cost and service are considered. We have found that combs built upon Dadant's Crimp-wired Foundation, in well-wired frames, stand up in high speed extractors and in the fast moving trucks of the migratory beekeeper.

Chas. S. Engle, Beeville, Texas.



Grandfather Charles Dadant, typically French, Founder of the firm of Dadant and Sons

1863 1953

Dadant & Sons, Inc.

Hamilton, Illinois — Paris, Texas

G. B. Lewis Co. Branches—Colonie & Montgomery Sts., Albany 1, N. Y.; 1117 Jefferson St., Lynchburg, Va.; 92 Riverside St., Chillicothe, Ohio

Dealers Everywhere

SINCE 1878 DADANT'S FOUNDATIONS HAVE BEEN THE CHOICE OF EXPERT BEEKEEPERS

Gleanings in Bee Culture

CONTENTS

December, 1954

Established 1873 Vol. 82, No. 12

Some Facts about Royal Jelly — M. V. Smith .....713 - 715
Honey Wine — Roger A. Morse .....716 - 717
Carrying Clamps — Benjamin F. Morris 717
Reclaiming Comb Infected with American Foulbrood — J. E. Eckert.. 718 - 723
So You Want to Keep Bees — George Arthur Quinn .....724 - 725
Us Smaller Fellers an' Selling — H. R. Swisher .....726 - 727
Some Experiences on Handling and Processing Honey — Ralph W. Barnes .....728 - 730
Retail Your Honey — Earl Seidlinger 731
What Our Industry Needs — E. W. Stewart .....732 - 733
Live and Learn — Propolis Pete 734
To Eat or To Give — Mrs. Benj. Nielsen 735
Editorials .....736 - 737
Let's Talk about Honey Plants — Harvey B. Lovell 738
Bee Facts 739
American Honey Institute News Notes — Mrs. Harriett M. Grace 740
From Foreign Lands 741
Cause Not Cure — C. F. Saxe 742
Shouldn't It Be Flavor Rather than Color? — Andre Prost .....742 - 743
Ancient Bee Houses — Robert N. H. Skilling 743
Vitex Trees in Oklahoma — Frank Wells 744
It's an Idea — Milton Stricker 744
A "Tin" Super — C. D. Cannon 745
A Talk to Beekeepers — M. J. Deyell .....746 - 749
Oscar Wallace Park 750
George H. Vansell 750
Federation Convention in Chicago 751
Just News 752

Subscription Rates: United States, Canada, Pan American countries, and Spain, one year, $2.00; two years for $3.50; three years for $5.00. Single copy, 20c. Other countries, 50 c per year additional for postage. Discontinuance: Subscription stopped on expiration. No subscriber will be run into debt by us for this journal. Change of Address: Give your old address as well as the new and write the name to which the journal has heretofore been addressed. Remittance should be sent by post office money order, bank draft, express money order, or check. Contributions to Gleanings columns solicited; stamps should be enclosed to insure return of manuscript to author if not printed. Advertising Rates: Advertising rates and conditions will be sent on request. Results from advertising in this journal are remarkably satisfactory. Advertisers' Reliability: While the publishers do not guarantee advertisements in this journal, they use utmost diligence to establish in advance the reliability of every advertiser using space in this journal.

Entered as second class matter at Post Office at Medina, Ohio. Published monthly. Opinions expressed by the writers in these column are not necessarily the opinions of the editors.

The A. I. Root Company, Publishers, Medina, Ohio

M. J. Deyell, Editor; H. H. Root and Walter Barth, Associate Editors
M. W. Hobart, Assistant Editor

The Perfect Combination

Root Quality

BEE SUPPLIES
and
SERVICE
from
SYRACUSE

Before placing your order, be sure you have our latest catalog and price lists. Your request on a postal card will bring them to you.

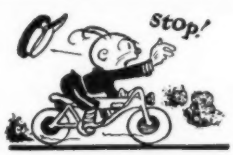
Root Bee Supplies to help you produce the most honey.

Honey Containers to market your honey attractively.

Modern equipment for rendering your beeswax at reasonable prices.

We pay the highest market prices for rendered beeswax — cash or trade. We will send shipping tags — just ask for them.

A. I. Root Co. of Syracuse
1112-14 Erie Blvd., East
Syracuse 3, N. Y.



STOP....

and think of the Tennessee Bee and Honey Co. when ordering your apiary needs. We are the ROOT bee supply headquarters for the central Mississippi valley. We will trade ROOT wired or Wyrless 3-ply foundation and bee supplies for your beeswax and will pay the highest prices for it. We also offer choice queens and package bees at fair prices shipped parcel post, express, or truck to any point.
Please write for information to the

Tennessee Bee & Honey Co.
Shelbyville, Tenn.

Western Beeswax Headquarters

Certified Beeswax Salvage Plant
Custom Rendering
Bleaching and Refining
Foundation Manufacturing
both plain and wired.
Top Cash Market
for Your Beeswax

MILLER'S HONEY CO.
Colton, Calif. Phone 1722

WE RENDER BEESWAX
We will buy the wax
or make up
ROBINSON Brand
plain foundation
or
WAVY-WIRED
wired foundation

WAX WORKERS
1330 Slaterville Road
Ithaca, N. Y.

We work your beeswax and purchase all grades of honey.

We pay you the best prices for quality honey and beeswax.

The Fred W. Muth Co.

229 Walnut St., Cincinnati 2, O.

TWIST BEE SUPERS
Standard Dovetail
New No. 2 Grade Super
75c each
201 Alpha St. San Francisco 24
California

HONEY WANTED
Bryant & Sawyer
2425 Hunter St., Los Angeles 21

BEES AND QUEENS
Everything for the Beekeeper.
Telephone: Hartford 5-5546

Apiculture Supplies

Sensible Prices Since 1886

Write for Catalog

WILLIAMS BROS. MFG. CO.
5205 S. E. 82nd Avenue
Portland 66, Oregon

We will work your **beeswax** into foundation or buy it for cash. We will render your old combs or cappings. Write for shipping tags and prices.

Schmidt Apiaries
Rt. 4, Bay City, Mich.

The Merriest Christmas
and
The Happiest New Year
IS
Our Wish for You
ALSO
A Grateful Thank You
FOR
Your Patronage

August Lotz Co.
Manufacturers & Jobbers
Bee Supplies
Boyd, Wisconsin

For
Root QUALITY
Goods in MICHIGAN
It's
Prairie View Honey Co.
Detroit, Michigan
Mail orders handled promptly
We carry a full line of "everything for the beekeeper"
HONEY bought for cash or traded for supplies
Plenty of parking space for cash-and-carry customers
PRAIRIE VIEW HONEY CO.
12303 Twelfth Street
Detroit 6, Michigan

" Wise - Woodmanize your Bee Supplies"
A. G. Woodman Co. (Send for Catalog-350 Listings) Grand Rapids 4, Mich.

COLORADO HONEY
Available
in Carloads or Less
Samples, Grades and Prices Gladly Submitted
Wire or Write
COLORADO HONEY ADMINISTRATIVE COMMITTEE
1635 Blake Street, Denver, Colorado

H. H. JEPSON CO. — 46 Lincoln St., Boston, Mass.
Supplying N. E. Beekeepers with A. I. Root products for 50 years.
Boston Stock — Root Prices

— HONEY WANTED —
ALL GRADES. SEND SAMPLES
ADVISE QUANTITY
HONEY SALES COMPANY
1806-08 No. Washington Ave.,
Minneapolis 11, Minnesota

BRITISH BEE JOURNAL
The Only WEEKLY BEE Journal in the World
Subscription $4.50 per annum payable in advance.
Keep up to Date in Beekeeping by taking out a subscription now through our agents:
Gleanings in Bee Culture
Medina, Ohio

The New Zealand Beekeeper
The Quarterly Magazine of the National Beekeepers' Association of New Zealand. Better Beekeeping — Better Marketing. Subscription, 8 shillings per year, payable to
THE GENERAL SECRETARY
Box 19 Foxton, New Zealand

OLDEST BEE JOURNAL IN THE ENGLISH LANGUAGE
Keep up on markets, practices, scientific data, regulations and plant possibilities.
1 year, $2.00, U. S. and Canada
Foreign postage, 50c a year extra
AMERICAN BEE JOURNAL
Hamilton, Illinois

Monthly HONEY Report

United States Market

The following figures represent an expression of current prices from beekeepers and honey packers over the country. They are based on several reports from each state averaged with the reports in the region. Where insufficient information is returned, prices have been omitted from the chart. Where three figures appear on the chart the first figure represents the low, the middle figure represents the average, and the third figure the high price in cents per pound. Where only two figures are used the low and high are shown.

	North & South Atlantic	South Central	North Central	Midwest	West
Bulk Honey:					
Table Grade	12-15-18c		10-13-14c	12-13-15c	11-13-14c
Baking Grade	10-12-14		10-11-13½	10-11½-12	9-11-15
Price to Grocers:					
5 lb. jar - can	19-22-26	19-25-27	18-20-21	20	18-19-21
2 lb. jar - 12's	23-27-30	24-25-29	22-25-28	24 25	22-24-26
1 lb. jar - 24's	23-26-30	22-26-30	23-25-29	24-25-26	23-25-27
Comb Honey: Cs. of 24 Sec.	$7.20-9-10	$7.20	$8.40	$7.90	$9.60
Retail Price:					
60 lb. can	15-16-20		14-16-23	16-20-22	15-16-21
5 lb. jar	22-25-35	22-30-32	19-25-30	22 25	20-24-26
2 lb. jar	28-35-38	33-35-42	24-31-33	25-30-31	28-29-33
1 lb. jar	29-36-40	30-35-50	29-33-35	29-35-37	33-35-39
Honey Sales:	Fair	Fair	Fair	Fair to Good	Fair
Estimated Crop: Conditions based on normal %	Poor to Fair	Fair	Fair to Good	Fair	Fair

A few comments are as follows:
"A good crop of thyme honey was harvested."—N. Y.
"Winter prospects are very poor."—N. H.
"Very little honey in hands of producers."—Tenn.
"Many colonies low in winter stores."—Minn.
"Bees filled up for winter on fall flow."—Ark.
"Sales very good for this time of year."—Ariz.

Canadian Market

(Unless otherwise specified, all quotations are for cases of No. 1 white.)

HALIFAX: Mkt. steady.
N.S., past., paper,
24/1's ..... $ 6.30
N.B., past., paper,
24/1's 6.75
N.B. and Ont., past., metal,
24/2's 12.50
Ont., past., paper,
48/1's 13.50
gran., metal,
24/2's 9.30
liquid, glass,
24/1's 7.90

SAINT JOHN: Mkt. steady.
Ont., past., glass,
24/16-oz ..... $ 7.80
paper,
24/1's 6.90
24/2's 12.25

MONTREAL: Mkt. steady.
Que., White metal,
24/2's $11.50-12.00
12/4's 11.00-11.50
glass,
24/8-oz. 4.50- 4.75
24/16-oz. 6.75- 7.00
Dark metal
24/2's 7.00- 7.50

OTTAWA: Mkt. steady.
Ont., past., paper,
24/1's ..... $ 6.55- 6.50
metal,
24/2's 10.75-13.00
12/4's 10.35-12.45
Golden, metal
12/4's 8.50- 9.75
Amber, metal,
12/4's 8.50- 9.75

TORONTO: Mkt. steady.
Ont., past., paper,
24/2's $10.75-11.50
24/1's 5.95- 6.25
glass,
24/16-oz. 6.75- 7.00
Amber, paper,
24/2's 8.00- 8.25
Man., past., metal,
12/4's 11.50-12.50

WINNIPEG: Mkt. steady.
Man., metal,
24/2's ..... $ 9.95
12/4's 9.35
past., paper,
48/1's 11.55
24/2's 11.25

REGINA: Mkt. steady
Sask., metal,
12/4's $10.75
past., paper,
48/1's 12.80-12.90
metal,
24/2's 12.25-12.35
12/4's 11.70-11.80
6/8's 11.55-11.60

SASKATOON: Mkt. steady.
Sask., metal
24/2's $10.45-10.65
12/4's 10.00-10.25
past., paper,
48/1's 12.60-12.90
metal,
24/2's 12.30-12.50
12/4's 11.75-11.80

EDMONTON: Mkt. steady.
Man., past., metal,
12/4's $10.80-10.85
Sask., metal,
24/2's 9.80
Alta., past., paper,
48/1's 12.20-12.85
B.C., liquid, glass,
12/1's 4.60

CALGARY: Mkt. firm.
Alta., metal,
12/4's $10.50-11.25
6/8's 11.00
past., paper,
48/1's 12.25
24/2's 11.75-12.40
metal,
12/4's 12.40-12.50

VANCOUVER: Mkt. steady.
Alta., past., metal,
24/2's $12.95
12/4's 12.60
carton,
48/1's 13.00
24/2's 12.60
B.C., unpast., carton,
24/2's 6.95

the Hubbard APIARIES

WANTED: Honey and Beeswax

Write for Free Catalog

Quality Bee Supplies **Factory Prices**
Prompt shipment from Stock **Satisfaction Guaranteed**
Manufacturers of Bee Supplies and Comb Foundation

THE HUBBARD APIARIES

Onsted, Michigan

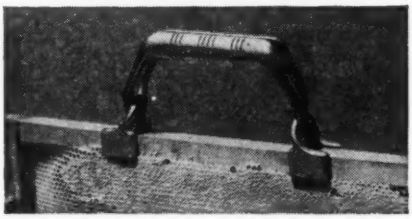
We appreciate the opportunity the Holiday Season brings to say, "Thank You", and wish you

A Merry Christmas

Leahy Mfg. Co.

Higginsville, Mo.

McCord Frame Grip



"Originators of Frame-Grips"
Send now to McCORD MFG. CO.
Rt. 2, Box 866, San Jose, Calif.

Positive grip through the leverage action of this strong aluminum Frame-Grip.

DELUXE $2.75
UTILITY 2.45
Plus 32c postage fee.

Also obtainable from your leading Bee Dealer.
Don't accept a substitute.

THE NEW B.L.M. WAXMASTER

Electric Capping Melter, featuring thermostatic control, compact design, increased capacity and economical operation at a much reduced price. Sizes and prices to fit your particular needs. Consult us for further information.

B.L.M. Manufacturing Co.
Lisbon, N. Y.

The Marshfield Mfg. Company

Marshfield — Wisconsin

Wishes to extend to everyone everywhere their very best wishes for the holiday season.

May the New Year bring Health and Happiness to you and yours.

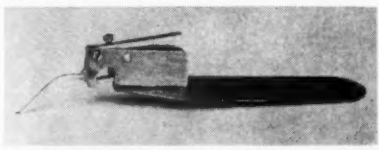
Manufacturer's **Apiary Supplies** **We Sell Direct**

SUE BEE SAYS:

A **Merry Christmas** and a **Prosperous New Year.** Send us a card and you will receive a nice gift pencil.

Sioux Honey Association

Rogers, Texas Anaheim, California
Tacoma, Washington
Sioux City, Iowa



QUEEN RAISERS

Transfer your larva with the MASTER QUEEN GRAFTING TOOL. Quick. Easy. Accurate.

Price (with extra tongue) $3.60

HUTCHISON MFG. CO., 2008 S. Sepulveda Blvd., Los Angeles 25, Calif.

WAX

We are in the market for your beeswax. We accept any size lots from one pound up. We will work 25 pounds or more of your wax into bee comb foundation at a big cash saving to you. Write for our wax-working circular. On lots of 100 pounds or more of wax we pay the freight when it is sold to us for cash. If you need supplies other than comb foundation trade in your wax and we will give you a premium price on trade basis. Write for details.

THE WALTER T. KELLEY CO. CLARKSON, KENTUCKY

STOLLER'S

Frame Spacers

The finest thing ever offered beekeepers. See your dealer, or write.

STOLLER HONEY FARMS
Latty, Ohio

HONEY WANTED

Cut Comb and Extracted
Advise what you have

T. W. BURLESON & SON
WAXAHACHIE, TEXAS

BEESWAX WANTED

We need 50,000 pounds of beeswax.

Ship what you have to us, and write us stating quantity.

Ship direct. No duty.

Prompt cash payment.

Canadian price higher and Canadian money worth more.

W. A. CHRYSLER & SON
Chatham - Ontario - Canada

U. S. Savings Bonds come in all sizes . . . . .and grow bigger every year.

Season's Greetings

from YOUR FRIENDLY ROOT DEALERS

Your Source of Quality Bee Supplies

THE A. I. ROOT COMPANY

Factories at Medina, Ohio — Council Bluffs, Iowa — San Antonio, Texas

Distributors in Principal Cities

Dealers Everywhere

Some facts about royal jelly production

Is large production practical? Technique of producing, removing and storing revealed

M. V. SMITH*

CONSIDERABLE interest has recently been centered on royal jelly, that remarkable secretion of the pharyngeal salivary glands of the worker honeybee. Those associated with honeybees have always been more than mildly interested in this substance, which, when fed lavishly to a tiny larva which ordinarily would have become a worker, is capable of transforming it into a perfect queen.

It is also logical to assume that a food material such as this, which, when fed to a mature queen, enables her to lay more than her weight in eggs in a single day, must contain some factor which is capable of producing a tremendous physiological activity. However, many fantastic and totally unproven claims have recently been made for royal jelly.

Most of the beekeeping journals have, in recent months, carried articles dealing with some aspect of royal jelly. One issue of a New York newspaper delved rather fully into this subject. But the prime concern at the present time is for scientific research to analyze this secretion in an attempt to isolate and study the factor or factors which give royal jelly its remarkable properties.

With this thought in mind a project was undertaken this summer at the Apiculture Department, Ontario Agricultural College, for the purpose of producing sufficient royal jelly to enable some research to be carried out on the nature of this substance. The techniques employed and production records kept may prove to be of some value to any who might be interested in a project of a similar nature.

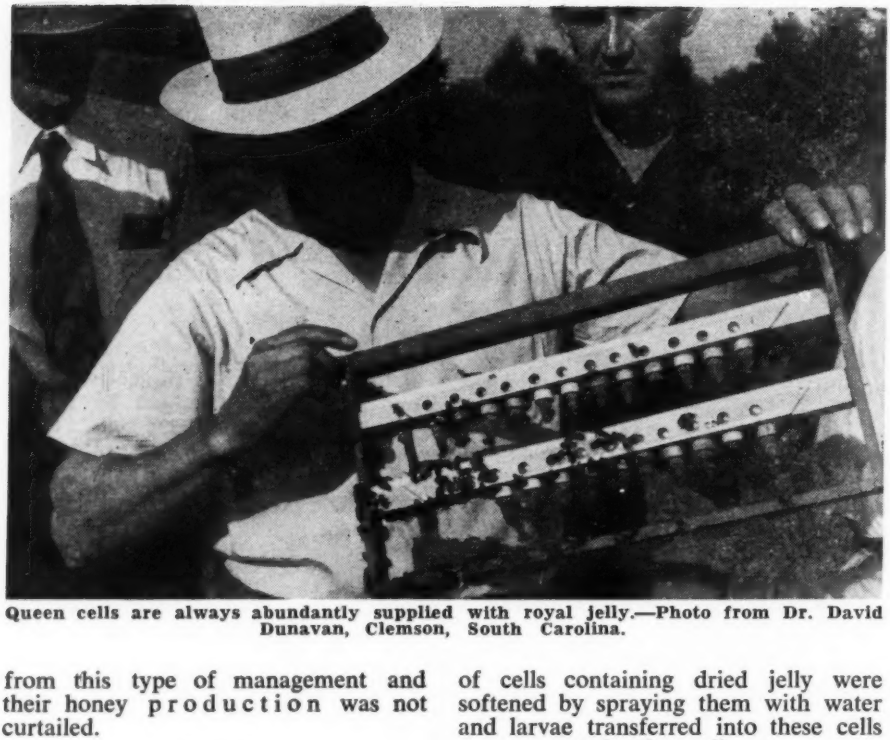
* Apiculture Dept., Ontario Agri. College

At the outset of this project six colonies were set up to act as nurse colonies for grafted queen cells. This number was later increased to nine and finally to 12. The queen of each colony was confined beneath a queen-excluder in the lower brood chamber. Immediately above the excluder was placed a super of honey combs containing no brood. The third super was filled with combs containing nectar, pollen and open brood. Additional room was provided as the season advanced by adding honey supers immediately beneath the top brood chamber.

Grafted cells were placed in the top brood chamber for feeding, according to the following three-day schedule. On the first day a frame of grafted cells was placed in the top chamber of each colony. An additional frame of cells was added to each colony on the second and again on the third days. Then on the fourth day the first lot of cells, which was now three days old, was removed, the jelly collected, and the cells re-grafted and replaced on the colonies. Thus each colony was feeding three frames or roughly 120 to 135 cells at any one time, and one lot of cells was collected and replaced each day.

Once a week the colonies were checked and the brood combs rearranged. To assure that a maximum number of young nurse bees would be present in the top super to feed the cells, frames of capped brood from the top chamber were exchanged with frames of eggs and young larvae from the lower brood chamber. Although these same colonies were used for the two-month duration of this project they appeared to suffer no ill effects

B & Z LIBRARY



Queen cells are always abundantly supplied with royal jelly.—Photo from Dr. David Dunavan, Clemson, South Carolina.

from this type of management and their honey production was not curtailed.

Grafting

LARVAE ABOUT 18 to 24 hours of age were grafted into artificial queen cups mounted on three bars fastened into a standard frame. Each frame contained from 40 to 45 cells. For the first week of this project the grafted cells were placed between frames of pollen and nectar in a queenless broodless swarm box for a period of 24 hours, then transferred to the top chamber of the nurse colony for further feeding. Later it was found that cell acceptance was just as good, and that considerable time could be saved, by placing the grafted cells directly into the nurse colony.

Re-grafting was done into the original cells after the jelly had been collected. Results were equally good whether the larvae were placed directly into the wet cells or whether the empty cells were first placed in colonies to be cleaned out and polished up. Results were not as good if the film of jelly in the bottom of the cells became dried out before regrafting could be completed. On several occasions frames of cells containing dried jelly were softened by spraying them with water and larvae transferred into these cells were accepted quite well.

Removal and Storage of Jelly

As will be pointed out below, it was found that a maximum amount of jelly could be obtained by removing the cells from the nurse colony three days after grafting. The three-day-old cells were brought into the laboratory and pared down with a sharp razor blade to just above the jelly level. This made it easier to remove the larvae and collect the jelly, as well as considerably speeding up the re-grafting.

The jelly was collected into vials by a suction tube arrangement, then weighed and stored immediately in a deep-freeze refrigerator. Several lots of fresh jelly were subjected to a freeze-vacuum method of dessication and the dried powder was stored in the deep-freeze for future use.

Production Records

During the course of the season records of the age of the cells, number of cells and production per cell, were kept. This data is summarized in the following table:

Table I

Royal Jelly Production

Age of cells	2-day	3-day	4-day
Jelly per cell			
Av. in mgms.	147	235	182
Av. No. cells per Gram of jelly	6.79	4.25	5.49
No. cells recorded	1959	5024	711

On several occasions the records were not kept separate when 2- and 3-day, or 3- and 4-day cells were taken off at the same time.

When these figures are considered, a total of 2159 grams of jelly was collected from 10,861 cells for an average of 5.03 cells per gram. It should be borne in mind that the above figures are overall averages and include both well fed and poorly fed cells.

A considerable variation was observed in the production of various colonies. On one occasion two frames of 40 cells from two of the better colonies averaged nearly 500 milligrams per cell, while certain colonies were consistently below the overall average. Production could undoubtedly be raised above the averages quoted here if the nurse colonies were carefully checked over and only high producing colonies retained.

Labor Factors

HOW MUCH labor is involved in the production of royal jelly?

What price should the producer sell it for?

There have been some rather fantastic prices quoted—some ranging as high as $5000.00 per pound.

Monsieur J. G. Gauthier in the April 1954 issue of **La Gazette Apicole** expresses the opinion that those beekeepers who feel they can get rich over night by producing royal jelly are building "castles in Spain". According to his estimates it would require from one month to six weeks to produce 300 grams of royal jelly from 30 hives—at the end of which time the 30 hives—which he would operate as queenless units—would be in very poor condition. He feels that at a price of roughly $1200.00 per pound such an enterprise would not be very profitable.

If production could be increased to 300 grams in one week from 12 hives, and after two months the hives showed no ill effects—as we found was possible—then there is no reason why a pound of royal jelly could not be produced for a considerably lower figure. To maintain 12 hives on a full production schedule, as outlined above, requires about six man hours per day.

Large scale production of royal jelly will not be feasible until there is a commercial demand for this product. Such a demand can only be created if our research workers are able to present the public with reliable facts to prove that this wonder secretion of the honeybee is of definite value to them.

Hive Loading Hand Truck

Mr. F. J. Stephens, of Inverell, N.S.W., demonstrates a hive loading truck which he has been using successfully for about two years. Mr. Cliff McLane and Mr. Stephens are partners in a project of making these trucks for beekeepers. The truck, which can also be used as a barrow for extracting purposes, was exhibited at the last beekeeping conference and won the Best Gadget Competition.—Reproduced from the Australasian Beekeeper.

Honey wine

Here at last are simple wine recipes

ROGER A. MORSE*

MANY PERSONS have asked how honey wine is made and what recipes should be used. Making wine is not unlike keeping bees. There are general rules to follow but yet these rules allow for a certain amount of change and application of individuality. To say exactly how a wine is made and what methods are employed is nearly impossible.

But for the person who has never made wine at home before, here is an experiment from which one might learn some of the principles involved.

To make wine requires sugar and other food for the yeast, living yeast cells, a receptacle for the fermentation to take place in and the proper temperature. For this experiment clean thoroughly a one-gallon cider jug. Into the jug pour half a gallon of fresh water, two pounds of honey and one can of frozen concentrated grape juice. Cork the jug and shake the contents until the honey is dissolved. Add one cake of fresh bread yeast from the grocery store. Remove the cork and wipe the inside of the mouth of the jug dry with a cloth. Stuff the neck with a wad of cotton (the gas formed is thus able to escape and no bacteria can enter) and place the jug in the cellar or where the temperature is about 65 to 70° F.

The essentials have been met—alcohol will be formed and the wine maker can follow the course of the fermentation process which will be complete in about three weeks. If the resulting concoction tastes like the well known bathtub gin of prohibition days it is only because the art of wine making has been completely excluded. Yet the alcoholic fermentation has occurred. Correction of one, or all but one, of the errors found in the above system would still not make a perfect wine.

Special considerations in wine making include the type of barrel or container used, the type or kind of yeast, the temperature, the fermentation valve, the method of clarification and the formula followed. This does not include all the factors involved. Making a fine wine requires years of experience and endless experimentation. The selection of the proper method and formula from all that is known about wine constitutes the art of wine making. Some of these considerations have been discussed in a recent paper. (Gleanings in Bee Culture 81: 536-538. 1953).

Formulas for making honey wine are numerous and endlessly varied. All require a 20 to 30 (the extremes) per cent sugar solution with sufficient vitamins and minerals so that yeast growth with the resulting production of carbon dioxide and alcohol may occur. All wine recipes lie within limits set by the growing yeast cells.

Making wine for home consumption or family use is within the restrictions of the law, provided not over 200 gallons are made. A permit to make wine at home is required and may be obtained from the Alcohol Tax Unit of the Bureau of Internal Revenue.

Here are some recipes which may be of interest and can be tried at home. All formulas may be increased proportionally. The volume of wine to be fermented at one time and the fullness of the fermentation barrel are further considerations about which much has been written.

Four Popular Recipes

No. 1.

1 gallon water (spring or well water)
4 pounds honey (each type of honey has its own flavor in the wine)
4 grams tartaric, malic or citric acid (may be purchased in a drugstore)
4 grams ammonium phosphate (drugstore)
4 grams urea (drugstore)
4 grams cream of tartar (grocery store)

*Ithaca, New York.

No. 2.

1 gallon water
4 pounds honey
½ gallon of fresh orange, grape or other juice
(3½ pounds of honey will produce a drier wine while 4½ pounds of honey will produce a very sweet wine. The producer must experiment to suit his taste)

No. 3.

1 gallon fresh elderberry juice
2 pounds honey

No. 4.

Here is an old-fashioned mead recipe dating from the 1600's. The fermentation in this case does not proceed rapidly enough to prevent bacterial spoilage so add six grams each of tartaric acid and ammonium phosphate for each gallon of juice to speed up the process.

1 measure of honey
3 measures of water

Boil the above until the total quantity is three measures. Skim off any material which rises to the top. Add clove and ginger to suit the taste. Allow to cool before adding the yeast.

As above a fresh yeast cake obtained in a grocery store will cause the fermentation to occur. However for the best product a good yeast should be used. Berkeley Yeast Laboratory, 3167 College Avenue, Berkeley, Calif. offers yeasts for sale but these are best suited for grape wine production. Francois and Cie, Institut La Claire, Dijon, France offers yeasts especially suited for honey wine production. Both concerns give details concerning production with the yeast.

Carrying Clamps

by **BENJAMIN F. MORRIS, W. Lafayette, Indiana**

PERHAPS SOME ONE can give me a better name, but I doubt that anyone can give me a handier, quicker appiied tool for carrying hive bodies or loaded supers too heavy to handle by one man, or to make carrying easier.

You can make your handles of any length 2 x 4 inch scraps whittled round for easy hand holds. The strap piece is strong ¾ x 2 inch, and long enough to bolt onto the handles, with one ¼-inch bolt three inches long with washers.

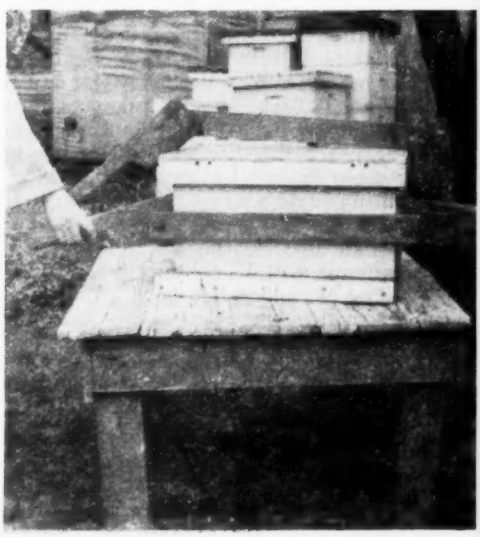
The technical item is to allow enough clearance so that when the handles are released they sag down and release their hard grip on the hive. This clearance also makes it quick and easy to grab up a box and go.

The picture shows one clamp holding the box firmly. The two clamps are reversible, by turning end for end.

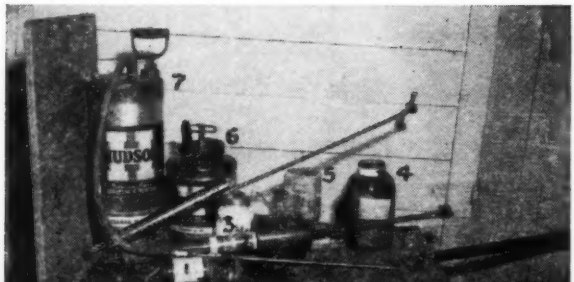
The handles should be long enough for one to walk between either at your back or in front of you, and walk right along carefully.

Note the handles are attached to strip lower to the bottom, giving its grip on top, as you lift. The angle of the handle is shorter at the bottom than top.

Pick up a wheelbarrow wheel and attach to one end of your handles and lo and behold you have a hive-wheelbarrow.



The bee hive carrying clamps in action. It can also be used for carrying full supers of honey.



Equipment used in treating AFB colonies. 1, 2, and 3 are types of dusters; 4, shaker jar used mainly to apply dusts; 5, entrance feeder (division board feeder not shown); 6 and 7, spray tanks for applying sprays.

Reclaiming combs infected with American foulbrood

Author finds that intelligent use of drugs can cure AFB

J. E. ECKERT, University of California

OVER THE PAST several years, or since Dr. Haseman in 1945 first demonstrated in the United States that sulfathiazole could be used to cure colonies infected with American foulbrood, numerous investigators and practical beekeepers in many countries of the world have contributed convincing proof that certain sulfa drugs and antibiotics can be used successfully in curing colonies infected with this disease.

Late in 1953 the writer acquired the equipment of 13 colonies that had been killed after they had been found infected with American foulbrood.[1] The colonies had been inspected prior to the removal of the honey crop and the hives were left intact after the bees were killed.

There were two two-story, eight three-story, one four-story, and two five-story colonies in the lot. No queen excluders had been used so diseased brood was found in more than one hive body of some colonies and in varying amounts. Each hive body was marked to indicate its position above the bottom board and all frames containing visible amounts of infected brood were marked with an A or AA on the top bars, depending on whether they were lightly or heavily infected.

All combs with honey except for one set of eight, were extracted in a two-frame honey extractor, producing 840 pounds or 14 60-pound tins of honey. The combs were returned to their original hive bodies and stored for the winter.

The bottoms, tops, and hive bodies were simply scraped free of propolis and burr combs, none being washed or scorched in any way. Nine of the poorest combs were burned and replaced with other combs. In addition, several hive bodies of combs from

[1] Microscopic diagnosis later indicated that the infection in one colony was European foulbrood instead of American foulbrood.

other AFB colonies were secured for further tests with different chemicals or antibiotics, a majority of the combs containing scales of AFB disease in varying degrees.

Methods Used in Reclaiming the Combs

Thirty-two colonies of bees were established on the combs in single-story hives in April, and six more in May. In addition, 16 colonies were established on the other diseased combs in May and June.

The first 29 colonies were made by shaking bees from the second or third stories of colonies that had been successfully cured of AFB in previous years when the colonies were in need of additional room. Most of the queens were also transferred directly with the bees and then the healthy colonies were moved to another location. When the queens were not transferred, young queens were introduced into the newly established colonies. Some nectar and pollen was available from fruit bloom and other plants in April and May and bees were not prone to rob.

When these newly established colonies had healthy brood in all of their combs and were in need of supers, bees from half of the number of colonies were shaken, with their queens, onto other sets of AFB combs. The shaken sets of combs were then added as second stories to the other colonies which were not shaken. These two-story colonies were then moved to an alfalfa-seed location.

Four of the original colonies were given a second set of AFB combs after they had eliminated all visible evidence of AFB from the first sets. In these four colonies the queens were confined to the newly added combs until they were filled with healthy brood, under the stimulus of medication.

Number of Diseased Combs per Colony

WHILE ALL of the combs used in this experiment came from diseased colonies (with the exception of the nine used as replacements), five sets of nine combs showed no visible evidence of AFB at any time.

The other colonies contained from one to ten infected combs with an average of four visibly infected combs per colony. Some of the combs were so heavily infected with AFB scales that the queens were retarded in their egg laying for lack of suitable cells, and even laid in cells that contained portions of scales of larvae dead of AFB. Apparently healthy larvae were also seen occasionally in such cells, which the writer had never observed previously and had considered as highly improbable.

Method of Treating the Infected Colonies

Since the honey had been extracted from the combs, with the one exception mentioned, colonies established before the beginning of the main honey flow (June 14) were fed on diluted honey plus a given medicant. The 14 60-pound tins of honey extracted from the diseased combs were thus fed back to the bees during this treatment and used up in the process of forming new colonies. In addition, the different medicants were mixed with powdered sugar (containing three per cent starch) and dusted over the top bars of the brood combs in a manner to add an approximate amount of the active material at each application.

Each colony was fed and/or dusted at approximately weekly intervals with the exception of 19 colonies which had built up to three and four story colonies, apparently free of disease, and were used in pollination services and for producing surplus honey. These colonies were not treated with medicants during the honey flow. Honey supers were placed above queen excluders.

The medicants used during 1954 were aureomycin (7 colonies), terramycin (33 colonies), sodium sulfathiazole (7 colonies), sulfadiazine (19 colonies). Two additional nuclei were also treated for AFB by dusting only with terramycin and powdered sugar.

The **aureomycin hydrochloride** 25 was dissolved in water and mixed with dilute honey at the rate of one teaspoon per 10-pound tin of syrup, and as a dust 5 tablespoons of aureomycin 25 to a pound of powdered sugar with 4 tablespoons of the dust mixture given at each application. These combinations contained approximately 0.214 gm. aureomycin at each application (.05 gm. when fed by the quart in entrance feeders)*.

* (A pound equals 453.59 grams).

The **terramycin** was used in two concentrations, TM-25 and Bi-Conn TM-5, the number in each case indicating the number of grams of the active ingredient in each pound of the material. The Bi-Conn TM-5 was mixed with equal parts of powdered sugar and approximately four tablespoons of the mixture were shaken over the top bars of the brood frames at each application. In feeding terramycin in the honey syrup, one level teaspoon of the TM-25 (Poultry Formula) was dissolved in each 10-pound tin of syrup or one-fourth teaspoon in each quart of syrup.

In feeding the powdered **sodium sulfathiazole,** the usual amount of one-half gram (or one-fourth teaspoon) was dissolved in each 10-pound tin of honey syrup. The dust mixture was made by mixing seven teaspoons of sulfathiazole with each pound of powdered sugar, then dusting two to four tablespoons of the mixture over the top bars of the brood combs at each application. (This approximates one-half gram of sulfathiazole per application.)

The sulfadiazine was used in the same proportions as the sulfathiazole in both the syrup and the powdered sugar and was fed in the same manner and amounts as the sulfathiazole.

Division board feeders, Boardman entrance feeders, and inverted friction-top feeders were used in feeding the syrup. An attempt was made to feed no more syrup than the colonies needed. In each case, the medicant was first dissolved in warm water which was then used to dilute the honey. (The honey was not heated.) The medicants in dust form were generally applied by shaking the dusts on the top bars of the brood frames, through perforated caps of bottles, the perforation being about three-sixteenths inch in diameter.

Types of dust guns were tested in applying the dusts but the dust guns available will not deliver a known amount of dust and so are not very feasible for use in experimental work. The amount of dust applied by the shaking method is also approximate but a heavy coating of dust over the top bars of ten frames equals approximately four tablespoons of material.

The dusts sifted down through the combs, covering many of the bees and drifted into cells of honey and brood. This was especially true when the dusts were applied by the force of a dust gun. A spray gun was also used, in practice, to apply known concentrations of the materials in liquid form and while this method has been used successfully by others, lack of uniformity in the amounts applied reduces the value of experimental records.

Observations and Manipulations

EACH COLONY was examined at approximately weekly intervals until visible evidences of disease had disappeared to determine the reaction of the bees to the different medicants. All colonies were examined again in the fall. Records were taken of the strength of colony, frames with brood, amount of disease observable, amount of stores, and other factors pertinent to the treatment.

When the center combs were well filled with brood, they were moved to

No. 5 and 5B. Established on May 8, 1954 with 6 and 7 AFB combs, many scales, treated with sulfathiazole, free of AFB in 72 and 51 days, respectively and stored a super of honey. Were badly infected. Supered August 6. Length of treatment extended by the heavy infections. Can be divided to make four colonies in the spring.

the outside of the brood area and the other combs were moved or crowded to the center. Two or three such moves over a period of three to five weeks generally resulted in getting brood reared in a majority of the cells of all of the combs in a one-story hive, aided in a rapid build-up of colony strength and in a more rapid elimination of the disease. (While the frequent examinations are not essential to the success of the treatment, they are to be recommended especially for those who have never seen how the medicants enable the bees to clean up infected combs and rear healthy brood in cells that previously contained AFB.)

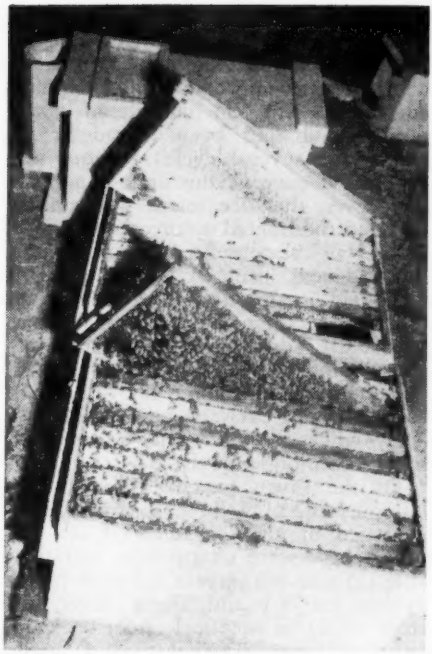
It appeared to be quite important to the rapid eradication of all infection from a diseased comb to get the bees to clean out the cells for brood rearing and to have no more combs than the bees required. It is also important to have a prolific queen and a strong enough population of bees to cover the combs.

It also seemed desirable to get the bees to use up the old honey in the hive while they had access to the medicants in their food. This can be done best by extracting the honey and feeding it back or by treating the colony with medicants in dust form during a dearth of nectar. The use of medicants in spray or dust form may tend to add the medicants to open cells of honey and thus improve conditions for the bees to eliminate any disease present.

It should be remembered that **the sulfa compounds or the antibiotics act only to prevent the development of the AFB bacillus and do not act in any capacity as disinfectants or sterilizing agents.** The queens were confined by queen excluders to the AFB sets of combs when supers were added for the honey flow.

Summary of Results

BETWEEN THE time the bees were established and all evidences of the diseases had disappeared, no new cells of AFB were observed to have developed in any comb except in two colonies which were being treated with **aureomycin.** In these two cases, only a few cells of new infection were found, after which the treatments were changed successfully to sulfathiazole in one case and to terramycin in the other.



This colony had both EFB and AFB, and on May 24, 1954, was fed four times with TM-25 and dusted once (0.66 total grams used) and was free of both diseases on June 14, 1954. Built up from five combs to a full two-story colony and stored super of honey during summer.

Five sets of combs showed no evidence of AFB at any time, indicating either that the combs were not contaminated in the first place or were freed of any contamination by the bees under the influence of aureomycin (one colony), or sulfadiazine (three colonies) or terramycin (one colony). No AFB developed in any comb that had not contained visible scales of larvae dead of AFB at the start of the experiment, in colonies treated with terramycin, sulfathiazole, or sulfadiazine.

The bees cleaned the cells of dead larvae or scales without tearing down the cell walls and either dropped the small pieces some distance from the hives or simply at the hive entrances. These portions of the scales were not attractive to bees and were soon dissipated by the winds or by ants and other insects. (Untreated, healthy colonies in the experimental yards have not become contaminated by such materials.)

One could not determine the exact day on which AFB disappeared entire-

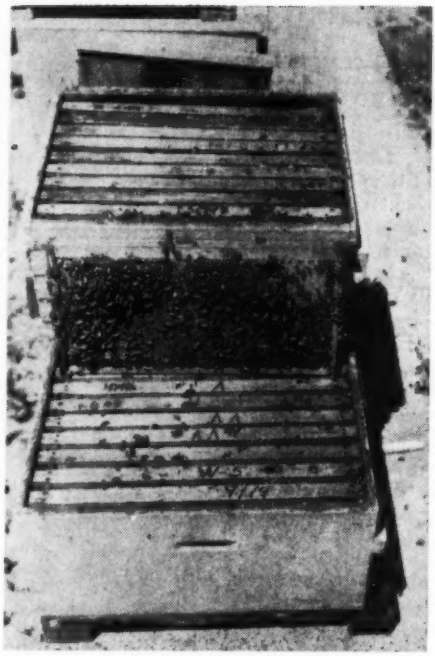
ly from any colony so the number of days given for the disease to disappear in the accompanying table must be considered as approximate. **An infected colony was not considered cured until brood had been reared in all combs for several cycles without any visible evidence of the disease appearing.** Even then treatment was continued and the treated colonies and equipment will be observed carefully this fall and next spring.

To aid in this determination and to have brood reared in all combs before supers are added next year the three-story colonies were divided in August and the divides wintered above division boards placed over the parent colonies. They will be set off and observed as separate colonies next spring.

Of the seven colonies treated with aureomycin, only three (having visible evidence of disease) cleaned up, the other three were changed to sulfathiazole (2) and terramycin (1) after it was evident that it would take a longer time than would be practical under beekeeping conditions. Katznelson and Jamieson have indicated that aureomycin is slower acting than sulfathiazole.

The results indicated that terramycin, in syrup and/or dust form, enabled all of the colonies treated to eliminate all evidence of AFB in from 11 to 72 days with an average of 33 days. (Two of the colonies had both AFB and EFB and all visible evidence of both diseases was eliminated in 21 and 35 days, respectively. Two colonies with EFB only were apparently disease-free in 28 and 43 days, respectively.) Three colonies treated only with terramycin in dust form eliminated all evidences of AFB in 21, 23, and 35 days, respectively.

While no effort was made to correlate the amount of medicant fed to the amount of visible infection in the beginning—for all combs had been in diseased colonies—the total amounts applied per colony varied from 0.3 gram to 1.0 gram of terramycin with an average amount of 0.66 gram. Treatments were continued for varying lengths of time after all evidence of the disease had disappeared, as a measure of safety, and in this manner an average of 0.3 gram of additional terramycin was fed to each colony, or an average total for the year of 1.0 gram per colony. This would equal



Colony established on AFB combs (four heavy with scales) on May 27. Fed twice and dusted two times with terramycin. No evidence of disease on July 6, at which time a super of combs was given above a queen excluder. Remained then and stored 15 combs of honey. Photo taken July 19.

one-fifth pound of Bi-Conn TM-5 per colony (which sold at 65½ cents per pound).

THE COLONIES treated with sulfadiazine cleaned up all visible evidence of AFB in from 14 to 61 days or an average of 28 days. They were fed an average of three times and dusted an average of two times. The amount of sulfadiazine used per colony until the AFB disappeared varied from 1.5 to 4 grams, with an average of 2.1 grams. An additional amount of 1.6 grams per colony was fed after the disease was no longer in evidence.

Three of the seven colonies treated with sulfathiazole were established after the honey flow had begun and received only dust treatments during the honey flow. Two of these received honey syrup and sulfathiazole as part of their winter stores, in late August and early September, when one had one cell of AFB and the other three cells. It took from 37 to 72 days for the other five colonies to eliminate the

disease and an average of 3.5 grams of sulfathiazole was fed or applied during the treatments. The number of colonies fed sulfathiazole was insufficient to compare sulfathiazole in efficiency with either sulfadiazine or terramycin.

All honey stored by colonies that were treated during the honey flow was left with the colonies for winter stores. The other treated colonies produced their winter stores (equivalent to a super of honey) and a surplus of 16 60-pound tins or 960 pounds. In addition, 18 supers of honey were set aside for spring stores for the colonies under observation. Fifteen of the colonies were divided and are being wintered in three stories, with the divides above division boards on their two-story parent colonies. (These colonies require more honey than average three-story colonies.)

The amount of time involved was necessarily greater than normal because of the study made of the progress of the elimination of the disease. Ordinarily, if one follows the suggestions contained herein, the testing or reclaiming of infected or suspected combs

(Continued on page 757)

Table 1

Summary of AFB colonies treated with medicants in 1954

No. of Colonies	Medicant Used	Times Treated [1] Syrup	Dust	Grams of Medicant Fed	Additional Grams Fed	No. Visibly AFB Diseased Combs	Disease Last Seen in Days
3	Aureomycin	3	1	0.79	0.33	4	29
30	Terramycin	3	2	0.66	0.31	4	33
12	Sulfadiazine	3	2	2.1	1.6	5	28
7	Sulfathiazole	3	4	2.8	0.5	6	58

[1] Until all visible evidence of disease had disappeared.

Table 2

Typical variations of data in treated colonies

Colony Number	Date First Treated	No. of AFB Combs with Scales	Times Fed Syrup	Times Dusted	Grams[1] of Medicant	Additional Medicant	Disease Free in Days
Terramycin							
7-B	April 2	2	4	3	.91	.47	31
8	April 2	3	3	2	.83	.17	18
13-B	April 6	5	1	2	.50	.62	16
10	April 8	6	3	2	.70	.45	22
10-A	April 8	1	2	1	.50	.25	14
12	April 8	2	2	1	.50	.41	21
12-A	April 8	4	3	2	.70	.37	28
8-A	April 13	6	2	1	.50	.95	11
13-D	April 15	4	2	0	.33	.62	13
1	April 15	9	3	0	.37	.44	21
8 + 6A	April 28	8	7	5	.74	.37	26
11A + 5A	April 29	9	6	4	.76	.17	46
Sulfadiazine							
7	April 2	8	2	2	2.0	4.5	20
6-B	April 2	6	2	2	2.5	1.4	27
7-A	April 2	5	3	3	2.0	1.5	41
8-B	April 2	6	3	2	1.6	1.1	34
9-A	April 2	3	3	3	3.0	1.4	41
9-B	April 2	1	2	3	2.5	0	27
11	April 6	2	2	2	2.0	.9	16
11-C	April 6	0	4	5	3.1	.5	0
12-B	April 8	1	2	1	1.5	3.0	14
12-C	April 8	3	2	1	1.5	2.0	21
13-C	April 15	5	2	1	1.1	1.3	21
9-A+4-A	April 28	7	4	2	1.4	1.3	15
Sulfathiazole							
5	May 8	6	3	4	3.5	.5	72
5-B	May 8	7	2	1	2.0	1.0	51
4	May 8	6	3	4	4.0	.5	71
6	May 8	5	4	5	4.0	.5	37
W-14	July 7	4	4	5	1.9	—	58
W-15	July 7	4	4	6	3.6	—	75
W-16	July 7	7	0	3	1.5	1.0	28

[1] All colonies started in single story hives on AFB infected or exposed combs with the original lower body, number only; second story, "A"; third story, "B"; fourth story, "C"; fifth story, "D".

B & Z LIBRARY

A beginner at work. Harry Tall, Ithaca, N. Y. is examining a colony in his home apiary while a friend Leslie J. Rick, of Trumansburg, N. Y., looks on.

So you want to keep bees!

A beginners' experience

GEORGE ARTHUR QUINN*

I HAD ONLY a few more feet to carry the hive when my leg buckled, and down we went. A full ten-frame hive of bees, beebread, and honey went crashing to the ground.

I had just finished lifting out each individual frame, checking to see if my bees had enough stores to last the winter and early spring, and was moving the hive to its winter location.

The hive landed on an end with such force that several frames popped out, spilling mad bees all over my nude chest and shoulders. I had been going through the hive without hat, veil, shirt, or undershirt, and at that time in late fall when bees are supposed to be the orneriest.

The bee book says about handling bees: If you should by mischance irritate them, just close the hive and slowly walk away. No doubt about it, I sure had irritated them and how!

Now even an ignoramus knows that no bees, at any time, like to be handled in this fashion; so the book doesn't say what to do in such a situation. However, I deemed it an exigency requiring something faster than a walk. So, not bothering with the preliminaries of closing the hive, I took off so fast that I scooted out from every bee—almost. There were a few busy bees tangled in my hair, however, from whom there was no escaping.

I wouldn't advise such handling as regular procedure—the beekeeper perhaps wouldn't always escape so easily.

Beekeeping as an enterprise is not only profitable but very fascinating. As a hobby, it is more than fascinating. It's about the smartest hobby a body can undertake, especially with the three-banded Italian honeybee; certainly a pursuit wherein one cannot fail to

*Alameda, California

learn something from all angles and ends! Of course, it's a great advantage not being entirely a novice when one gets his first colony of bees. But half the fun is in starting from scratch, like I did. Did I say scratch? Well, you'll soon enough learn to not scratch or rub the bites!

For the novice, with his first colony, a book such as "How to Raise Bees" is a must. One of the things it will instruct you on is control of increase in colonies. And it is important that this increase be controlled, otherwise **you** won't get any honey.

YOU CAN BE a great help to your bees if you co-operate by obeying certain rules and follow the procedures adopted by all good beekeepers; and which is fully treated in any good bee book. However, there are times when the best of us are thoughtless and careless.

There is that time of the first summer of my newfound hobby when a careless oversight on my part caused my bees to revolt and mutiny. Right then and there I learned that when the book says "Do not ever wear wool!" it means exactly what it says! A clean cotton shirt, preferably white, is enough on the upper part of the body after you are acquainted with your bees.

When you are experienced in handling them you may even discard this and, hatless, veilless, and shirtless, go through the hive lifting out the frames, searching for one that has every cell of honey cured, capped, and ready for the table. When you can do this, your bees have really accepted you as their friend and keeper.

Don't try this with a dirty, sweaty body, or with an alcoholic breath. Always be clean when you open the hive or the bees will take you for a stranger, a robber, and treat you as such.

Well, this day, through carelessness, I insulted the finer senses of my bees—I opened the hive, completely ignorant of the fact that I had on a loud fuzzy-wool argyle sweater. I'd no more than gotten the cover off when I was snowed under with infuriated bees. The surprise of such a reception committee made me instantly aware of my mistake; but too late. The bees piled up on that wool sweater inches deep before you could say Jack Robinson! Piling-up room was soon at a premium and so there was an enforced migration to my exposed neck and face.

At first, however, I kept my head and started walking slowly away, both hands busy sluffing handfuls of angry bees off my face and neck. It seemed a futile thing to do—there was no end to that pulsating, vacilating horde of boiling bees which kept over-flowing on to my exposed hide. I soon found out that I had a very vigorous colony of bees in that hive! But in the situation I was in I couldn't properly enjoy that beekeeper's delight right then.

According to the book, one of the first things you should learn to do is shake bees off the combs. It instructs you precisely on how this is done. But, alas! I never had any success at it. Now if I could have gotten my bees to read those certain instructions, maybe they would have understood what I was trying to do, that that was supposed to be the gentlest way of getting them off the combs. But no! The slightest shake and they'd go wild! I always ended up by having to brush them off the combs with the bee brush.

The book frowned upon this method —said it was slow, tedious, and sure to arouse their ire. But my way was the way my bees wanted it! Oh, well, it was the "bees" getting put off "their" combs, and in the end they had the final say as to how they'd rather have it done.

Your greatest pleasure will come when, in due course, you are at last able to find the queen! This is rather difficult until you become proficient in handling bees. To spot this busy lady among hundreds of thousands of bees is r e a l l y an accomplishment. When you consider the fact that she is capable of laying between one and two thousand eggs daily, and each in an individual cell, she most certainly has to be continually on the move. Your patient search will be fully rewarded when, as at long last, you do find her and gaze in wonder upon the golden b e a u t y of her regal highness, the "Three-banded Italian H o n e y b e e Queen" surrounded by her court attendants in her own private boudoir, the brood comb.

So you want to keep bees! Good luck to you!

Us smaller fellers an' selling

H. R. SWISHER, President
Ohio Beekeepers' Association, Springfield, Ohio

RECENTLY I HEARD a fellow beekeeper make the observation that beekeepers were divided in three classes: the hobbyist who does not depend on beekeeping to furnish a part of his livelihood. In class two we will include all part-time beekeepers, from the hobbyist to those with a hundred or more colonies operated to supplement family incomes. Last, of course, will be those with hundreds and maybe thousands of colonies operated for a livelihood.

It should be clear from the beginning that we are directing our ideas toward the second class. So it is hoped this article will help others like us find a new way to sell more honey locally.

First, during the off season we optimistically prepare our equipment for the coming season. This optimism sometimes takes a lot of priming after prior experiences that could have been brighter. However, most of us manage it and look forward to the "year of years" that must be the one just coming. Next, of course, comes the heat, the stings, the manipulation necessary to get a crop, and the harvesting of whatever the crop may turn out to be.

The third part of the problem to me seems to be the most important, which is the selling job, the converting of the season's harvest into hard cash to supplement your family income. Your fellow beekeeper in the third classification is not going to appreciate you, if you don't do a good job.

We don't have too much of a processing plant, and lack the wholesale or jobbing outlets and other aids the larger beekeeper must have in disposing of his much larger crop. We do have some ways to help ourselves and if used to the fullest extent will help both ourselves and our larger beekeeper friends.

We have an opportunity to move our crop direct to the consumer. We will prepare our crop for sale to those who are acquainted with us and that will call for a "tip top" job in preparing it. These friends must be pleased with what they buy from us if they are to become repeat customers.

I want to say from experience that most local customers like the honey they are used to from their own locality. Honey considered finer by experts might not be considered so by local customers. We must make every effort to develop our local market to the fullest extent.

Role of the County Fair

NOW LET'S talk a little about the County Fair. From experience, its not any big thing as a starter. Of first importance will be promoting of the idea of making an adequate display of bees and honey among the beekeepers of your area, and that will not be the smallest part of your problem.

The exhibits and planning should be started before the exhibits are to be entered in your local fair. Enough local beekeepers must be willing to prepare for it to insure an adequate display. They must not be concerned about winning premiums, but must direct their efforts toward putting up as large an exhibit as possible to promote honey in their area. Extra dollars from honey sales will be pay enough, even if some one else walks off with a few ribbons. Your local county beekeepers organization (and every county should have one) would be the ideal group to work out the details.

If your local Fair Board can be convinced that you mean business and can deliver the exhibits, you should be able to secure an adequate premium list. Since it takes a lot of time and preparation to get an exhibit ready, the prizes should be adequate. Observation hives are added expense and to my

mind a necessary part of the exhibit if you get a lot of people to see your honey. It's surprising how many people like to see the bees so long as they are safely behind glass.

We will now suppose the exhibit is all planned and satisfactory arrangements made with the Fair Board. Someone in the group, or the group as a whole, should purchase a space adjacent to the honey and bee display for the preparation of a honey sales booth. If you get the bees and honey together you will get the people to see them. Now comes the part I can't explain and that is why, after people have become interested in the display, they will buy honey and lug it around with them. I do not believe the selling booth would be worth a plugged nickel unless it was adjacent to the bee exhibit.

Another idea that might interest some would be the producers' markets in many of the larger towns. Booths can generally be secured at reasonable rates. If your honey secures the approval of those who shop at these markets, it will, in time, provide another method of extending the local honey market.

Most of these markets operate on a one or two day per week basis and traffic is concentrated during selling hours. Inquiries for different kinds of honey will come and we try to meet them. Customers seeing the darker honeys will ask for sorghum and some will take the lighter honey for maple syrup, so we carry small quantities of both and find they do not hurt honey sales. Honey fudge and foods made with honey also increase the variety of what might be sold.

If every one with honey to sell, will explore and develop every opportunity to sell that honey in their local vicinity, this would help to move the entire honey crop each year at a profitable figure.

The author, H. R. Swisher, beside his honey exhibit at a 1954 County Fair. Mr. Swisher organized and put into motion a very successful advertising campaign for National Honey Week and Ohio's Honey Queen.

Here are the various honey containers packed and distributed by Mr. Barnes, who has the exclusive U. S. rights to the polyethelene container shown in the center.

Some experiences on handling and processing honey

Author gives honey handling tips

RALPH W. BARNES*

OVER THE PAST YEAR Gleanings has had articles pertaining to the handling and packing of honey from a great many contributors and some very valuable information is contained in them. The subject has been covered rather completely and there is not much left to be said on the subject that has not already been very well covered. We will, therefore, try to cover some of the highlights, and give some of our personal experiences.

Extracted honey, or liquid honey which is the more proper term, can be seriously damaged in the initial extracting process and I would like to point out some of the pitfalls that can easily be avoided at this stage.

We seriously question the advisability of using any kind of a melter to melt the cappings as they fall from the combs. This method, even though virgin comb is used (and by the way, honey should not be produced in old black brood combs that contain pollen and propolis gums), separates these and they pass into the liquid honey as very small particles and are difficult to remove. Where old dark brood combs are used discoloration is serious.

The honey pump is another source of serious trouble. The packing gland on the honey pump should be renewed every year. First, all the old packing should be carefully removed and good high quality graphite packing should replace it. All gaskets and bolts should be tight, and by all means, check the drain plug and see that it is absolutely tight. The motor that drives the honey pump should be operated by an automatic switch that turns on and off as the level of the honey changes in the sump to avoid pumping air and mixing it with the honey.

*Oakland, Nebraska

All of these points are mentioned because so much air is incorporated in the honey through the medium of the pump and allowing the pump to suck air when the honey level in the sump drops too low. Air bubbles incorporated into the honey in this manner are next to impossible to remove without using a filter and large amounts of filter air. Proper installation and maintenance will stop this.

On page 21 of the January issue of Gleanings there is shown a picture of a one-inch Oberdorfer gear type pump. These pumps are very inexpensive, costing about $17.50, and are capable of pumping large volumes of honey. We have one that is driven by a motor speed of 1725 RPM. The drive pulley is three inches in diameter and the pulley on the pump is 10 inches in diameter. This speed delivers 400 gallons per hour.

These pumps do not suck or lift the honey, they must be installed so that the honey flows to them. They are also capable of building up high pressure so care has to be taken that no valves are closed in the outlet line when the pump is turned on. These pumps do not incorporate air and are very rugged. They do, however, have a packing gland which has to be kept in proper condition.

The Honey Storage Tank

THE PIPES from the honey pump to the storage tank should reach almost to the bottom of the storage tank so that the honey is not allowed to fall and set up a churning motion. If a strainer is used, the same principle must be observed in it.

One important thing to consider should be to make certain that the honey is fully ripened, and has a low moisture content not to exceed 17.6 per cent. If there is more moisture than this present in the honey, then the honey should be preheated in a storage room up to about 100 degrees long enough to reduce the moisture content to the above-mentioned figure.

The reason for reducing the moisture content is to insure better keeping qualities. When it granulates there will not be enough moisture present to cause fermentation. Honey with a higher per cent of moisture will start to ferment when kept over a long period, even though it seems to be granulated solid. The article in Gleanings for September 1953, page 534, gives considerable information on this subject.

We have found that an ordinary room, if fairly tight, will serve very well if the temperature is raised to 100 degrees. At 100 degrees, the combs should be left only barely long enough to lower the moisture content, and they may be too warm to extract immediately. Lower temperatures can be used if the humidity of the air is not too high.

Extracting honey during rainy seasons introduces much moisture in the honey when it is exposed to the air. For that reason all tanks should be kept tightly covered and should not be allowed to stand any length of time until sealed in cans.

All this might seem to be getting off the main subject, but it is so important because you cannot undo the damage that can be done at this point in the production and packing of the honey crop. **The honey as it comes from the bees certainly does not need to be filtered or anything else done to it because it is sparkling and beautiful. It is up to us to keep it that way in every step of the processing.**

Removing Honey from Cans

THE NEXT STEP in packing honey for the market is to liquefy it and remove it from the 60-pound cans. The old style water bath should be avoided as you would avoid a plague.

The use of hot rooms, where the cans are inverted over a shallow trough to carry the honey away into large storage tanks, is the best method, we have found. After emptying the honey from the five-gallon cans, in our plant, it is run into large pasteurizers such as creameries use. These are stainless steel double wall tanks and are thermostatically controlled so that you can heat the honey to the desired temperature.

We have never seen a flash heater that was capable of thoroughly heating all of the honey. The honey next to the hot part of the coil gets quite warm and the balance of the honey slides over this and you have a mechanical mixture of warm and hot honey. For that reason, we use the creamery pas-

teurizer with the slow agitation which heats every particle of the honey to the desired temperature.

These tanks are capable of heating 150 gallons of honey from 120 degrees, which is about the temperature that it comes from the melting room, up to 160 degrees in 20 to 30 minutes. This is very rapid heating. The honey can be immediately pumped out through the strainers and into storage tanks ready for delivery to the bottling machine by a pump which is automatically controlled.

Strainers

We use the O.A.C. type strainer. The strainer tank is 22 inches in diameter and 24 inches high. The strainers are made to fit inside the tank with one inch clearance. The outside strainer screen is 100 mesh and the inside strainer screen is 40 mesh.

In operation, the strainer tank is always kept full of honey. The overflow is at the top and the honey is pumped into the inside strainer and this pipe from the pump goes nearly to the bottom of the strainer. This is to prevent the honey falling and setting up a churning motion which incorporates air.

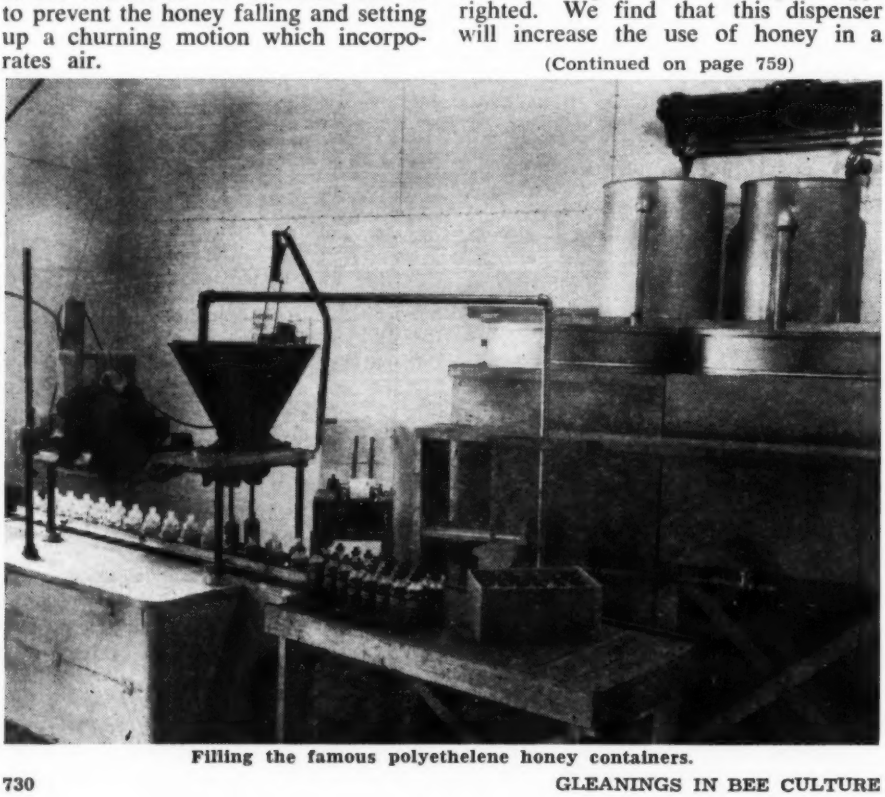
The strainer can be drained by opening the valve at the bottom of the tank when it is necessary to wash the strainers. Remember that the overflow pipe from the strainer must reach to within one inch of the bottom of the main storage tank. This is to prevent incorporating air, as previously mentioned.

Bottling

WE USE the piston-type filler which fills two containers at a time. Fillers can be obtained which will fill up to five or six containers at a time. Now, if it is desired to cool the honey more, it can be cooled on these tables as they are carried down to the capping machine. From the capping machine they are labeled and then cased. If the honey is still warm the cases should be stacked in a cool place with plenty of room for air to circulate around them so that they can cool down to room temperature as rapidly as possible.

Our new Squeeze-Me honey dispenser seems to be quite a novelty that creates a lot of interest. We have the name, "Squeeze-Me Honey", copyrighted. We find that this dispenser will increase the use of honey in a

(Continued on page 759)



Filling the famous polyethelene honey containers.

Retail your honey

Farm auctions offer new market

EARL SEIDLINGER, Columbus, Wisconsin

MARKETING A HONEY crop is often more of a job than producing it for many small beekeepers. Some have had to carry their crop over from year to year without finding much of a market. They can always sell to the big packers, but when they do all the sport is taken out of the marketing process.

The bee man with up to 35 or 40 colonies should have no difficulty moving his crop providing he has the time to do so. Selling is as time consuming as production, perhaps more so. Hour for hour you may find you spend more time marketing your honey than you do producing it—unless you job lot the works to one person.

Over the past six years I've tried several methods of selling the honey produced by my 25 colonies and have settled on the one that works best for me. This does not mean it will work best for you, but it not only moved all my light and amber honey but my buckwheat as well.

Advertising has been part of the program, but even that wasn't necessary. I placed small ads in the want-ad department of papers. They were the least expensive and they did let people know I was in the business. As for the ads encouraging people to beat a path to my door, they didn't. I've run ads for three weeks and have had only two customers come to the house.

People won't go out of their way to make a purchase when they can buy the same product at their grocer on their regular shopping tour. After all, why should they if you are charging the same price?

If you want to sell a product that is in competition with another product of the same quality, you must go where people are, make it easy for them to buy. In the case of honey, in rural or in some cases urban areas, sales can be made in two ways: Go from door to door or attend gatherings, such as auctions and picnics with your honey.

In my own case, I'm not a salesman. I'd be a nervous wreck if I had to go from door to door and ask people to buy. To me selling is the toughest job in the world, yet some others thrive on it. On the other hand, I am an order taker. If someone asks for honey I'm only too happy to sell it to them. That's why I go where there are crowds—mostly farm auctions.

Through ads in the local paper I learn where the auctions are to be held and the date and time. Then I load my car with 250 pounds of honey, mostly two and five-pound jars and 10-pound pails, and head for an auction. I try to get there early enough to get a good spot where the people can all see my car. Once parked I try to find the owner or his wife and ask if it will be all right to sell honey there. No one has refused yet.

From then on it's order taking. I put the jars on the hood and top of my car and go inside and read a magazine and wait. Everyone who passes sees the display because there is seldom much else besides the farm machinery to see.

For the first hour or two there are a few sales, but mostly inquiries. No one wants to walk around all afternoon with a five-pound jar in his arm or a 10-pound pail in his hand. They usually wait until they are ready to go home. In a half hour then you can sell between 75 and 200 pounds of honey. The rest of the afternoon is spent letting the people sell themselves on what is on your car.

As for prices, I've sold five-pound jars of clover honey for $1.10 that could be had in surrounding grocery stores for 95 cents. Only two people so far have mentioned the fact that they could get it cheaper elsewhere. There is something about the sun shining through the light honey that people can't resist. On the 10-pound pails I knocked off a dime and sold them for $2.10. But best of all, there turned out to be more buckwheat lovers around than I suspected. (The price on it was $1 for five-pounds, $1.90 for 10 pounds.) The reason more isn't sold is because it isn't offered to them. My records show that light outsells the dark two to one—about the same ratio my bees produce it.

B & Z LIBRARY

What our industry needs

by E. W. STEWART, Trenton, Texas

I AM a beekeeper and naturally am production minded. So this article is going to be from the honey producer's viewpoint.

This is becoming a complicated world in which to live. With strong lobbys in Washington trying to shape legislature to favor their clients' life in our U.S.A., it is daily becoming more complex. We are fast finding out that policies which help one group may do considerable harm to another group.

We need a stronger representation in three different places. They are:

1. Soil conservation
2. Research
3. Department of Agriculture.

Why do we need more voice in soil conservation policies?

Let me cite you a few instances. I had an outfit of bees in Minnesota some 10 to 15 years ago. Sweet clover grew wild in waste lands and along right of ways. Some was grown for soil building. This that was grown for soil building always kept the farmers' fields contaminated (this word contaminated is from the farmers' viewpoint) with clover seed and that meant acres of volunteer clover in all the wheat fields. Boy! was that country a place for honey production!

Then some bright soil-conservation-minded man had a "brain storm". The then so-called Triple A began paying the Minnesota wheat farmers $1.50 per acre. Now note, only $1.50 per acre to plow this sweet clover under before July 1st. This policy over a period of a few years cleaned the volunteer clover out of the wheat fields and changed my location there from a profitable area to a marginal production area. And it took only $1.50 per acre for a few years to do it.

Now let's take another type of soil-conservation policy that has ruined the big end of a whole state for honey production. The state of Montana has for years been a good honey-producing state. The clovers there grow, or I should say did grow, in the following places:

1. The waste lands used for grazing and hay.
2. Volunteer in the wheat acreages and roadsides.
3. And along irrigation canals and ditches.

For several years the county agents of Montana have been pushing herbicide sprays to control sweet clover. The road sides and the irrigation ditches are now bare of clover. Each morning the farmer goes out to his wheat field and looks it over. When he can see a dozen sprigs of sweet clover without moving around he calls up the aerial spray service and ZOOOOM the clover is a "dead duck".

The result of this type of weed control in Montana has been disastrous to the honey producer. I know of a lot of places that once produced big crops of honey but for the last four years have had a 30-pound surplus. About every one is trying to sell out or lease his bees. I would call this type of spray control a unilateral type of planning. No consideration was given to the long time results of this spray program beyond the benefit to the dirt farmer. I am not trying to dig the soil conservation service. They are doing plenty of good. But their programs should be drawn up with the beekeepers in mind.

We Need Research

ANOTHER PLACE where we need to have more say-so is in research. There are a lot of angles or avenues that warrant the need of more information. I am going to discuss two of these. They are two that if research could solve them they would go a long ways towards ending our low production.

A lot of our honey is produced from volunteer clovers on waste land. Some 10 or 15 years ago a new clover scourge known as the clover weevil began to appear in the north. At that time it cleaned all of the volunteer sweet clover out of the waste lands and road sides of North Dakota. Last month I was talking with the State

Entomologist of North Dakota. He told me, "That whenever they get a control for the clover weevil all of North Dakota will become once more a top honey producing area".

This same weevil is cleaning the south half of Montana, parts of Nebraska, South Dakota, Minnesota, and Iowa. It finished the last of the sweet clover in Northwest Missouri three years ago. This past season it got so hungry in Missouri that it ate all of the red clover and alfalfa seedlings. It is also working around Denton, Texas.

The second place where I would suggest that we try to get a lot of research work done is on why—when sweet clover is first introduced in an area it produces good sized crops of honey of a high quality. But after 10 or 15 years of clover honey production the size and quality of the honey crops begins to taper off.

To illustrate my point: When sweet clover was first grown in the black land of Kentucky a bee man by the name of Virgil Weaver got big crops of honey. In fact, he produced the first carload of honey in Kentucky. After about eight years of good crops he sold out to his brother and he told me that his brother never did get another good crop from sweet clover.

Around 1918 sweet clover came into Northwest Missouri and we averaged around 175 pounds per colony per year up until 1935. We didn't worry about the weather or the clover before 1935, because when the season was over we always had a good crop of honey. I especially remember one fall when we put one deep super around back on the bees the week of August 5th. The bees filled and plugged them with clover honey. From 1935 on the main honey flow has ended around July 20th. Any little off weather or just plain anything would stop the flow. The color became darker, the flavor stronger.

Take in Northern Iowa—we used to put a deep super of foundation around on about the 10th of September and get it drawn out, filled and capped. Now the flow is over there by the 25th of July.

IN MINNESOTA I have gotten a hundred-pound average after August 10th. Now it is all over by August 1st. I have had some of the boys who had bees in northern Minnesota tell me that when they first moved in with bees they could set down any size yard just about anywhere and get big crops of honey. After about ten years they had to watch the size of their yards, watch the locations they picked, and pray for good weather to get even a much smaller crop.

No doubt you are thinking that changing agriculture is causing this tapering off in honey production. But I believe it goes deeper than that. Let me give you one more fact that I have accumulated. This story substantiates the theory that the harvesting of honey crops off of an area year after year takes something out of the soil that is necessary for good honey yields.

I had a man from Quebec, Canada, working for me who told me that back in the northern part of the province of Quebec sweet clover had grown for years ceiling high or higher. The Province finally built a road into this inaccessible area. Of course, he immediately trucked his outfit back there and for several years got immense crops of honey. Then the yields began to drop off even though the clover was still there and looked just as good as ever.

Some 15 or 20 years ago while talking with the late Morley Pettit of Ontario, Canada, our conversation got around to our fading honey crops. Mr. Pettit remarked, "That years ago if the season was right even the fence rails produced honey for me in Ontario. But now something has happened to my territory and good crops are getting farther and farther apart, even though the clovers are still there".

Another thing I have noticed along this line: I have moved into a lot of new areas, generally where there had been no bees for some time. I have never failed that first year to get a whopper crop of honey—even when I came to Texas. And never has it failed—I would have been ahead to have moved out before the second season—even in Texas.

So I consider our two top problems to be—the control of the clover weevil and soil depletion caused by continuous honey harvesting.

Live and Learn

by Propolis Pete

WHOPEE—I DID IT! Took the blue ribbon at the annual county honey contest. In all truth, I didn't expect it, because there are reasons beyond my control that should make it easier to produce better honey than I can do here. But the man said that mine was the best, and I should contradict him?

I had three entries. One from my outyard, one from the home yard, and a section of my famous comb honey. The honey from the outyard was disqualified. The moisture content was 18.8 per cent as against a minimum allowable of 18.6 per cent. It seems tough to have an entry thrown out because of two tenths of one per cent too much moisture that the bees either couldn't or wouldn't take out. But we must have standards, and what would things be like if all the rules were stretched. Actually, I thought that this honey was far superior to the product of my home bees, but the honey from the home yard is the stuff that took first prize. Believe me, all the town knows it too.

Want to hear something funny about this? I saw the score sheets, and the one for this prize honey had a notation to the effect that there was a mysterious off flavor, but which was not enough to do any harm to the quality. That same old mysterious off taste, it's my old friend privet—the tom-cat tang, as we say in private. Actually the bees didn't do much on the privet this year, for which I am grateful. When it yields heavily, which it does in some years, to me the taste is awful, but my customers don't seem to mind. The only nice thing about it is that it disappears in time, and the fact that the judge spotted it, although he couldn't quite place it, is a high tribute to his ability as a judge of honey.

I say that the off taste is caused by privet, because I notice in years when the bees work it heavily, that the taste is much stronger. But I was talking to another beekeeper a couple of weeks back and he mentioned that his honey had a bad taste this year. He blamed it on wild cherry, but his description fitted mine in bad years, so it could be that I have been blaming the wrong source. There is a lot of wild cherry around here. The bees didn't work it this year, much to my disappointment at the time, but since talking about it to this friend, I wonder if I was better off than I thought. The bad taste faintly resembles the smell of the privet blossom, but come to think of it, it also resembles the smell of a wild cherry twig when crushed. We'll have to do a little research on that next year. I don't know what good it will do, because there is nothing that we can do about it anyway.

The comb honey section took fourth place. Just enough to let me know that it was good, but not good enough. I sort of had more hope for this entry than for the others, because the section that I submitted was really a beauty. It was full from wood to wood, and while the box was propolized and travel stained, I sandpapered it to a nice finish. But sometime between the time I fixed it up and the time of the contest, the cells along the edges next to the wood started to cry, and that cooked my goose. Say, what the dickens can a guy do about those leaky cells in section honey? There didn't seem to be any fermentation to cause the honey to bubble, but in time nearly every section developed some leaky cells.

I have bought lots of comb honey in the open market for my own use, and never ran into any trouble like this before. And some of the ones that I bought must have been treated pretty roughly. So, my next problem is to find a way to keep otherwise perfect sections of honey from developing leaks. If it could be used up immediately, there wouldn't be any trouble, but in time those tears thin out and start to ferment, and then the whole section is spoiled. Lucky I only got those 66 this year. If I had to carry any of it over into the winter, I'd have quite a loss on my hands.

Plan now to attend the **Annual American Beekeeping Federation** meeting in Chicago, Ill., during the last week of January 1955.

To eat or to give

by MRS. BENJ. NIELSEN
Aurora, Nebraska

Honey almond tea ring.
—Photo courtesy Kellogg Co.

ALREADY FOR SANTA and the round of yuletide festivities? No? Every year it's the same. We vow to start early, then before we know it, we are rustling around in hectic preparations as usual—and resolving to start early next year!

If you still need gifts and cannot decide, honey goodies make delightful gifts, especially for those "hard-to-give-to" folks.

The yummy cake illustrated in the photo makes a honey of a gift packaged in one of the new "see-through" moisture preserving wraps and bright holiday ribbons.

Honey Almond Tea Ring

Two cakes or packages of yeast, ¼ cup lukewarm water, 1 cup bran, 1 cup scalded milk, ⅓ cup shortening, ⅓ cup honey, 1 teaspoon salt, 5 cups sifted flour, 2 eggs, well-beaten, 1 teaspoon almond extract. Filling: Three tablespoons softened butter, ⅓ cup honey, and ½ cup chopped blanched almonds.

Soften yeast in lukewarm water, Combine bran, milk, shortening, honey, and salt, stirring until shortening is melted; cool to lukewarm. Stir in enough flour to make a thick batter. Add softened yeast, eggs, and almond extract; mix well. Add remaining flour; mix well. Turn dough onto floured board, knead until smooth and elastic. Place in greased bowl; brush with melted shortening. Cover and let stand in warm place until double in bulk. Punch down; divide dough into two equal portions. Roll each portion into a rectangle about 22 inches long and about ¼ inch thick. Spread with butter and honey blended together and sprinkle with almonds. Roll tightly and bring ends together to form ring, moistening each end before pressing together. Place on greased baking sheet. Cut with scissors from outside edge toward center, at 1-inch intervals; turn each section slightly so cut edge is up. Let rise until double in bulk. Bake in moderate oven, 350 degrees F., 20 to 25 minutes. While still warm, brush with confectioners' sugar icing. Yield: 2 rings.

Honey Chocolate Fudge

One cup maple sugar, 1 cup brown sugar, 2 tablespoons butter, ⅔ cup honey, 2 squares chocolate, chipped, ¾ cup cream, ½ cup shredded coconut, and ½ cup nut meats, chopped.

Place sugars, butter, honey, chocolate, and cream in heavy skillet or saucepan and place over low heat. Stir constantly until sugars are dissolved. Then cook without stirring to 240 degrees, or the soft ball stage. Remove from heat, add coconut, and beat until creamy. Pour into buttered pans, sprinkle nuts over top and mark into squares when cool.

Honey Caramels

Three cups sugar, 1 cup butter, 1 cup milk, 1 tablespoon glucose, 1 cup honey, 4 squares chocolate, chipped, and 1 teaspoon vanilla.

Place all ingredients except vanilla in heavy sauce pan and cook, stirring constantly, to 252 degrees, or to hard-ball stage. Add vanilla and pour into buttered pans. When cool, cut into pieces with buttered scissors and wrap in waxed paper.

Honey Nut Divinity

Two cups sugar, ¼ cup honey, 1 cup boiling water, 4 teaspoons butter, 2 egg whites, 1 teaspoon almond extract, and almond or pecan nut meats.

Place sugar, honey, boiling water, and butter in saucepan, stirring until dissolved. Cook slowly to 240 degrees, or to the soft ball stage. Pour sirup over the stiffly beaten egg whites, beating constantly. Add extract and beat until creamy. Drop on waxed paper and decorate with nutmeats.

Editorials

Don't Let Bees Starve

DECEMBER IS rather late for feeding bees in the North, but when the weather is mild, feeding can sometimes be done. The syrup should be quite thick, two and one-half parts granulated sugar to one part water and it should be fed while warm or almost hot.

The thicker the syrup late in the season, the less work bees have to do in driving off the excess moisture from the syrup.

Inside bee feeders or ten-pound friction top pails with 25 or 30 holes punched with a three-penny nail in each lid, do very well for late feeding. Place the pail of syrup with the lid down, over the top bars of the brood frame, or over the hole in the inner cover.

We should not let bees starve, because next season may be the one we have been waiting for and if we feed our bees to bring them through the winter we will then be glad that we have colonies to take advantage of honey flows that may occur during the season of 1955.

Producing Royal Jelly

WE HAVE received quite a number of inquiries concerning the production of royal jelly which has had some publicity in newspapers and journals recently.

Apparently, those unfamiliar with royal jelly, its source and characteristics, have some fantastic ideas concerning the possibility of producing it in quantity. Royal jelly is a whitish pastelike substance produced by the pharyngeal glands in the heads of worker bees and fed to the larvae of honeybees.

It could be produced in the North only during the warm months of the year when bees are active. Even in the southern states, it would be difficult, if not impossible, to produce royal jelly in quantity throughout the winter months. Colonies of bees in most southern states are in a state of quiescence during November, December, and early January.

To maintain a continuous year-round production of royal jelly, it may be necessary to produce it in the northern hemisphere for six months and the remaining six months in the southern hemisphere where bees are active.

Royal jelly is very light in weight and a considerable amount of this whitish creamy substance is required to make one pound. We do not happen to know the specific gravity of it.

Some experimental work has been done in producing Royal Jelly and it would seem that if there is a future demand for it, a satisfactory technique of producing it in quantity can be worked out in due time. See article on producing royal jelly, page 713 of this issue.

Flavor Not Color of Honeys Important

WE MEET some people who think that white honey is the only kind worth using. Most of these people live in areas where white honey is produced.

There are many people, however, living in sections of the country where dark-colored honeys are produced who think that these dark honeys are better

than light-colored honeys. Most people like the kind of honey they are brought up on. That is natural.

Quality or flavor of honey is or should be the criterion on which it is judged. But here again some people like the flavor of one honey, others do not. Some people swear by clover honey. There are people who do not care for it.

Some years ago The A. I. Root Company put out the Airline brand of honey which had a coast to coast distribution. Five different flavors of honey were mixed together in order to make a blend that the majority of people liked. This seemed to be a move in the right direction, especially for a brand of honey that was sold in such quantities and had a wide distribution.

However, there is another side to the question, as brought out by Mr. Prost in his article entitled "Shouldn't it be Flavor Rather than Color", appearing in this issue, on page 742. In sections of the country where there are many sources of nectar people can be so educated to choose honeys they like best, from a variety of flavors offered. It would appear that people should have this privilege, as they do in selecting other foods.

It is the flavor, not the color, that should be considered in selecting a honey.

Bees in Towns and Cities

IN PRACTICALLY every town and city there are hives of bees in gardens or vacant lots. Such bees serve a useful purpose in that they pollinate blossoms and help to insure good crops of fruit and vegetables. Without an adequate number of bees near by it is impossible to obtain good yields of fruit and vegetables. It is common knowledge that when the bees visit the blossoms for nectar they come in contact with pollen and carry it from the male to the female parts of the plants, which brings about fertilization.

A city or town dweller may find a swarm of bees on his plum tree, and having heard or read about bees, will secure a hive for the swarm. In this way another beekeeper is born.

Many professional and business men keep a few hives of bees in their back yards and derive a great deal of pleasure and some profit from the honey they produce. Keeping a few bees on the side is an interesting hobby and serves as a diversion from the arduous tasks of business and professional life.

In some instances, bees make trouble with the neighbors. This is usually because of improper handling of the bees. It is advisable to manipulate hives during the middle of the day when bees are busy carrying in nectar and pollen. Hives should never be opened on a cold day or early in the morning or late in the evening.

It is also advisable to have the bees a reasonable distance from roads or streets, in a location where they have to fly up and over buildings and trees in order to reach sources of nectar and pollen. This helps to prevent the bees from coming in contact with people or animals nearby.

During the past few years, bees were barred from within the limits of a near-by city. Beekeepers resented this ordinance and just recently they succeeded in having it changed, so it is now possible to keep bees within the limits of that city.

The value of bees as agents in cross pollination far outweighs the monetary value of the annual output of honey and wax. It is said on good authority that bees are 15 times more valuable for pollination than they are for honey production. No less authority than Dr. W. E. Dunham, Dept. of Entomology, Ohio State University, says that at least 82 percent of the pollination of farm crops is done by honey bees. At present there are not enough hives of bees in the U. S. to do a thorough job of pollinating fruits, vegetables, and legumes, even though there are about five and one-half million hives in the U.S.A.

City and town dwellers who have fruits and vegetables should welcome some hives of bees near by to pollinate the blossoms. The owners of these bees are perhaps unknowingly rendering a very valuable service to agriculture, which service far outweighs the value of honey and wax produced by the bees.

Let's talk about honey plants

HARVEY B. LOVELL, University of Louisville

CLIMBING BONESET (**Mikania scandens**) is also known as snowvine, climbing hempseed, and duckblind. It has flowers in white clusters (sometimes pinkish) which resemble those of boneset to which it is closely related. It grows best in low, swampy land where it climbs over coarse herbs, low shrubs, and fences in a great tangle of vines.

When in full bloom, climbing boneset presents a beautiful sight with its hundreds of clusters of snow-white flowers, a veritable mass of snow in the early fall. It is a good honey plant all across the southern states from the Atlantic Coast to east Texas.

E. C. Davis wrote from Louisiana that it is a fine honey producer with him when the weather is not too dry and that the honey is fairly light in color and has a pleasing flavor. A. V. Dowling first showed me this vine at Valdosta, Georgia, and praised it highly. He called it snowvine.

Peppervine (**Ampelopsis arborea**) has also been called snowvine. In view of the fact that peppervine has flowers that are greenish and inconspicious, the name snowvine hardly seems appropriate. However, both J. H. Lovell and F. C. Pellett, in their books on honey plants, use this name as synonymous with peppervine.

I asked Erdman West, Professor of Botany at the University of Florida, which species was called snowvine in the southeastern states. Without hesitation he said **Mikania,** the climbing boneset, and then he added that he had never heard the name applied to peppervine.

In Arkansas where peppervine is extremely abundant in the eastern part of the state all the beekeepers to whom I talked used the name peppervine for the species and not snowvine. I found peppervine growing abundantly over the doorway of Raymond Fisher's honey house in North Little Rock, Arkansas, and also in the yard of Walter Kelley at Paducah, Kentucky. They both called it peppervine.

I hope beekeepers in the south where these two vines are abundant will write me and tell me which one they call snowvine.

Climbing boneset or snowvine.

Michigan. In a recent trip which took the writer through the southern corner of Michigan, he stopped at the roadside stand of Glenn Yeutter, who operates nine yards of bees in Lenawee County. Mr. Yeutter who sells all his honey retail from his home, told me that he has to purchase a retail license as well as to collect a sales tax.

His honey comes chiefly from alsike clover, the second cutting of alfalfa, and a little from buckwheat. The latter honey, which he had bottled separately, was dark but was mixed with so much alfalfa that the buckwheat flavor was very mild. In some years he obtains quite a bit of honey from thornapple or hawthorn (**Crataegus**). It is a rather dark honey with a strong flavor. Since the flowers of this thorny shrub have an unpleasant odor, it is not surprising that the honey has a bad flavor.

Maine. I again stopped to see my old friend Roy Genthner of Nobleboro

(Continued on page 758)

Bee Facts

(A Digest of Scientific Research)

Will Honey and Liquor Mix?

O. MARTENSEN-LARSEN of Copenhagen, Denmark refers to work by others indicating that fructose promotes the metabolism of alcohol, and states that he finds the peroral administration of fructose has a sobering-up, sedative effect on intoxicated patients. This effect appears in about 30 minutes, quieting the subject and making him more manageable. It also produces a desire to sleep.

The Dane got the same results with fructose but also had good success with Danish honey. The dose of honey is 125 Gm. (ca. 4 fl. oz.) repeated in a half hour. An excess can produce flushing, sensation of heat, palpitation, dyspnea and nausea or vomiting. This subsides within a half hour and in such instances may be counteracted by intravenous antihistamine therapy.

Martensen-Larsen, O., Detoxication of Drunkenness. British Med. J., No. 4885, 464 (Aug. 21) 1954.

Honey Cures Eye Infections

G. K. OSAULKO of the Eye Department of the Odessa (Russia) Provincial Hospital, states that honey is an ancient home remedy in Siberia. He uses honey as a base for ointments as of sulfonamides, instead of petrolatum, for various eye infections. Pure honey is also used in burns of the eye.

Osaulko, G. K., Use of Honey in Ophthalmology. Vestnik Oftalmologii 32:25 (May-June) 1953.

Unusual Forms of Allergy

CONSIDERATION OF severe reactions in children to bee and wasp stings is worthy of brief consideration here. Mueller and Hill have recently summarized this problem in an excellent article. A history of a shock-like reaction after being stung by one of these insects should call for immediate study and an attempt to desensitize the patient, as subsequent stingings are liable to be attended by reactions of even greater severity if not by a fatal outcome.

In children, identification of the insect is seldom made. It is therefore wise to use a mixed extract of bee, paper wasp, and yellow jacket, first doing an intracutaneous test with a 1:1,000,000 dilution of this material. If negative, treatment may be begun with 0.1 cc. of this dilution and continued at weekly intervals through dilutions of 1:100,000, 1:10,000, 1:1000, 1:100 and 1:10 until a top dose of perhaps 0.3 cc. of a 1:10 dilution has been reached if the patient does not prove too sensitive. The top dosage is then given at monthly intervals.

Unusual Forms of Allergy. Med. Clinics North America, Phila., W. B. Saunders Co., p. 1273. 1954.

Vetch Pollinators

IN A TWO YEAR test the Oklahoma Agricultural Experiment Station found that the presence of honeybees in fields of vetch increased seed production four times. The test was conducted by G. A. Bieberdorf at the Red Plains Conservation Experiment Station near Guthrie during '51 and '52.

Eighty colonies of bees were used in the test. They were placed in groups of 20 at four locations in the field. The bees were excluded from seven plots in the field by cages made of one-sixteenth-inch mesh screen. The same procedure was followed during the second year of the test.

Seed yields in the open plots averaged 436 pounds per acre as compared to 132 for the caged plots. There was no correlation between yields of plots close to the colonies (10 to 15 yards) and those at greater distances (up to 200 yards). In 1952, an average of four replications showed that the open plots produced 347 pounds more seed per acre than the caged plots.

Bieberdorf, G. A., Honeybees as Vetch Pollinating Agents. Okla. Agric. Exp. Sta. Mimeo. Circ. M-250. Feb. 1954.

B & Z LIBRARY

American Honey Institute News Notes

by HARRIETT M. GRACE, Director
Commercial State Bank Building, Madison 3, Wisconsin

AS A GOOD advertising medium, TV has it; there is no getting around it. Mrs. Grace, director of the American Honey Institute, made a very recent guest appearance on WTMJ-TV on the homemaker's program. While on the air she discussed honey uses and offered free recipe leaflets to homemakers who were interested in using honey in their kitchens.

But even Mrs. Grace, as staunch a supporter of honey as she is, was not prepared for the response that came from that offer. Over 3000 requests for more information about honey cooking had arrived at the Institute office only a few days after her appearance.

Can there be any doubt about honey's potential market? If 3000 homemakers from one locality would take the time to sit down and write for a honey recipe, think of how many more would be willing to use it if it were placed in their hands!

* * * * *

Talking about TV, reminds us—we witnessed the opening of a new TV station the other day, WSAU-TV in Wausau, Wisconsin. The tense excitement that charged the air before the actual program came on, the taut faces of the overworked members of the station staff who had worked night and day pulling the kinks out of the technical apparatus, the apprehension about how the picture would be received over local sets and those located farther away, the focusing, readjusting, testing of equipment, and at last, the final synchronizing of all these fragmentary parts into a whole and complete picture—all gave us a vivid impression of this complex new medium.

Truly, the birth of television has made its mark in the world of communications. We in the honey industry must watch it carefully to see how we can use it best.

* * * * *

New recipes are our life blood at the Institute. We need them to keep honey abreast of its competition, and to point out to the consumer how and why honey is so much better than any other sweet.

Newest of the new recipes that we are working on is a new quick use for honey.

It sounds so good that one of the national magazines wanted it.

The supervisor of a chain store group says "Give me a good recipe and I'll sell more of any food you name". We name honey and we have the recipes for you to use. The honey folks who have made good are those who distribute A.H.I's recipe folders to their customers.

In a recent talk the Director of the A.H.I. said "Know your business", "Know your competitor", and "Know your market". Do not enter markets that you can not handle as economically as your competitor who is established there.

Who does the buying in your locality? It is the husband and his wife who have a family of children. Did you try to secure his business by sending him a pound of honey when his first baby was born? Have you given the mother a copy of Old Favorite Honey Recipes? Can you afford 15 cents for this book that will make honey customers for life for you? Many beekeepers have done it. That is why we recently had another 25,000 copies printed which brings the total number distributed over 600,000. Housewives write us that it is the first book they get out when they start to bake. The orders come in because one woman tells another about it.

* * * * *

Did you honey home makers note the honey cookie recipe in the October issue of Parents' Magazine? Honey really gets around!

* * * * *

Dues are due. How can we say it any more clearly than that? As the calendar year turns to a new number we turn to the task of compiling our membership list and the annual directory. You know that this directory lists every member of the Institute and is sent out to each member at the beginning of the year. Be sure that your name appears in the new directory by sending in your dues for 1954 now.

FROM Foreign LANDS

Russian Observations

A BOOK, "In the Bee World" by by Khalifman was published in Moscow recently. In it the author mentions the following observations of interest to all beekeepers:

When bees bring in propolis they will quietly sit on the comb until another bee rids them of part or all of their load, and this can take hours. Apparently, it is difficult for field bees to remove the propolis without help.

On a summer afternoon one can find from 50,000 to 75,000 pollen grains on a single bee, according to the Russian author. He also found that in stinging, a worker bee is capable of injecting 0.3 mg. of poison into the wound. It was also noted that bees do not find a beehive by its odor but by the humming of the bees, since in Russia bees have been observed to be drawn to humming telephone wires.

Mr. Khalifman introduced honeybee brood into a bumblebee colony with interesting success. Ripe, capped brood comb from honeybees was placed in a bumblebee observation hive. When the brood hatched they went busily about their hive duties and the bumblebees **never noticed the difference.** However, when the young workers became old enough to go out into the field for nectar they always failed to return. They were observed returning to a regular honeybee colony nearby.

Several honeybees with injured wings stayed another two months in the bumblebee colony and one could see them feeding and cleaning the bumblebee queen and larvae as well as taking the nectar from the field bumblebees.

Khalifman. "In the Bee World."

Notes on Queen Shipping

EXPERIMENTS OF L. Kuks of the Beekeeping Institute in Krasnodarks, Russia, show that honey is the best feed for shipping queens. The queens live longer and consume less food in transit.

Of great importance is the age of bees sent along with the queen. Twenty-four-hour-old honeybees are unfit since they die the earliest. Bees and queens were found to live longer in transit when they were eight to tn days old. Twenty-day-old field bees were always excited and were not friendly to the queen. This resulted in a shorter lifespan for the queen.

The influence of light and temperature was also examined. Longest lifespan is reached in a temperature of 25 degrees C. (77 degrees F.). A higher as well as a lower temperature immediately shortens their lifespan. Light shortens bee life in transit considerably, therefore all queen cages should exclude as much light as possible.

Ptschelowodstwo.

Mint Honeys

THE WORLD-KNOWN pediatrition Dr. J. Langer, formerly from Graz, Austria, believes that honey from herbs, such as balm, mints, mallow, sage, etc., has many more healing qualities than other honeys. It would be wise, therefore, to plant as many herbs around your bee yards as possible.

Hessische Biene.

From the Field of Experience

Cause not Cure

Will There Ever Be an End to Drugs?

C. F. SAXE*

DURING RECENT years numerous persons have investigated the use of sundry drugs for the control of American foulbrood, European foulbrood, and Nosema. Perhaps this is true because it is the easy way out. It takes little imagination or scientific know-how to feed a chemical (developed by someone else) to a colony of bees. And it takes little know-how to determine if such a chemical will kill or cure.

Scientists everywhere are quick to recognize the dangers of chemical cures. Not only is there the problem of resistance (accompanied by increased costs when it occurs) but also the danger of contaminating our food supply with materials we know little of.

American foulbrood is well understood. But European foulbrood and Nosema are known in a less tangible manner. Obviously there is a connection between European foulbrood and the queen (or her strain). Nosema is seasonal in occurence. The "whys" answering these questions might expose weaknesses in life cycles which would lead to more permanent control.

If our scientists would place more emphasis on "cause" and less on "cure" beekeeping could be simplified instead of complicated by difficult and costly methods of control. Considering recommendations during the last ten years we might well ask, "How many drugs in 1964?"

*Meredith Center, New Hampshire.

Shouldn't it be Flavor Rather than Color?

Flavors Have Special Consumer Appeal

ANDRE PROST, New York, N. Y.

ALWAYS HAVING felt that far too much stress was being laid on color and mildness in the merchandising of "nature's oldest sweet", I heartily welcomed the editorial in Gleanings, "Let's Develop the Flavor Market", that appeared in the June issue.

How backward beekeepers in areas of special honey flavors have been to take advantage of the privileged position in which they find themselves, is nothing short of amazing. With what persistency they have to be prodded, no one knows better than I do.

As you rightly say, "there is a marketing opportunity for aggressive beekeepers who market honey for its special flavor rather than color and mildness". With what satisfaction I heard the buyer of one of New York's leading department stores, for whom, ten years ago, honey was simply honey, declare himself recently to be in the market for any honeys of new floral sources with which I could supply him, the fact notwithstanding that the store already carries over a hundred of the honeys we distribute. The reason he gave for his present enthusiasm pleased me particularly, namely, that experience had convinced him of the fact that so great was the appeal of particular honeys of lesser-known flavor that it brought persons to the store time and time again, who would not have come there otherwise. Thus did I find confirmed the theory on which I originally based my plans for popularizing honey.

Coming back to the question of color and mildness: To maintain that the best honeys are the light-colored and mild ones is to disregard the outstanding quality of such honeys as the wild thyme honey of Mount Hymettus in Greece, the Alpine honeys of France and Switzerland, and the heather honeys of England and Scotland, that have been world-famed for centuries. To me, this appears no less ridiculous than would be the argument that, to be highly palatable, a honey must necessarily be dark in color, and that, consequently, such light-colored honeys as are yielded by clover, basswood, wild raspberry, blueberry, fireweed, tupelo, etc., have no standing to speak of.

No! in the Creator's scheme of things, the color of honey was evident-

ly to have no relation to its delicacy. Variety being the spice of life, I, for one, would g r e a t l y regret being deprived of such honeys in the range of color and flavor, as vetch, poison-oak, snowberry, a l f a l f a, bluevine, sourwood, catsclaw, goldenrod, eucalyptus, marigold, and tulip-tree. Just as, depending upon my mood, I may prefer a piece of light music or a classic symphony at a given time, so do I derive great pleasure in diversifying my honey treats. That I am only one of a steadily growing number of honey-fanciers who seek variety, our sales of scores of different honeys to more and more department stores, fine food shops, cheese marts, honey farms, health-food centers, and even gift shops, throughout the United States, establishing honey shelves, cannot fail to convince me.

Speaking of variety, with what interest I learned the other day from the buyer of a department store in a section of Canada that produces excellent clover honey, that among the many American and foreign honeys we sell her, Maryland tulip-tree honey was the most sought after.

In closing may I add that, greatly neglected it seems to me, has been the possibility of giving atmosphere to our American honeys by a description of the locale whence they come. We shall not develop tomorrow a "honey of the Roman Emperors", as the rosemary honey of Narbonne in France (the "Narbo Martius" of the days of ancient Rome) is known, but, little by little, we can bring about the association in the public mind of given localities with particularly fine honeys.

Ancient Bee-Houses

by ROBERT N. H. SKILLING, Editor Scottish Beekeeper

BEEKEEPING HAS been carried on in Scotland since the earliest times. Before the introduction of sugar as a sweetening agent, every cottage, mansion house, and castle was equipped with its own apiary. Evidences of this widespread bee craft still linger in the gardens of many old houses, where one may, perchance, stumble on a long disused " bee-bole."

These "boles" were alcoves set in walls, or gables of houses. They were fitted with shelves which held several straw hives, or skeps, as they were known in Scotland.

The SCOTTISH BEEKEEPER for December, 1940, carries two interesting pictures of these ancient "boles", together with a lengthy description of their use. The East of Scotland College of Agriculture has for several years been gathering together photographers and descriptions of bee-boles still extant, and these should prove of historical value.

In some other instances, instead of constructing "boles" a bee-house would be built. The writer discovered a fine example of one of these recently in a garden at Stewarton, Ayrshire, home of the famous "Stewarton" hive.

The bee-house was built in 1855 and is a substantial brick structure about 12 feet long and five feet wide, with

room enough to stand up inside. Originally the roof was thatched with straw, but this was replaced some years ago by a slated roof. There is a small roof window, which cannot be seen in the photograph above.

Along the front there are six apertures, and another two at the end, from which the bees flew. Inside there were shelves on which the "skeps" were placed. The owner of the house, a Miss Cunningham, still remembers the busy hives which were kept when she was a girl.

The shelves and sliding doors of the apertures were still intact until they fell victim to some child "evacuees" from bombed Glasgow, who were billeted in the property during the recent war. So passes an interesting, if primitive, stage of our craft.

Vitex Trees in Oklahoma

A Promising Honey Source

FRANK WELLS, Ripley, Oklahoma

MY BROTHER has two trees in his yard that we are very enthusiastic about. They are 12 to 15 feet tall and they bloom from the first of June until frost. The bees work them continuously all day long, during the entire blooming period.

Brother Tony, who has kept bees several years, says they get both pollen and nectar. Because the bees work these trees all day and every day, even while working the other honey plants, I believe this would indicate the trees to be a rich source of nectar. But because of the number of colonies close to these two trees and that the bees get honey from other much larger sources while they are working them, it would be difficult for us to determine the quality of the honey secured. However, there doesn't seem to be any ill effects on the light colored, good quality honey produced at this location because of the two trees.

Not knowing the name of these trees, we called them "Bird Seed Trees". I suppose this was because of their attraction to the birds that came to get the seed. I sent some of the seed to Melvin Pellett of Pellett Gardens, Atlantic, Iowa, and he identified the seed as like their Vitex (**incisa negundo**) but he said there were some variations in varieties and for all he knew they may look about alike. Anyway, he says, from the description it sounds like a good honey plant.

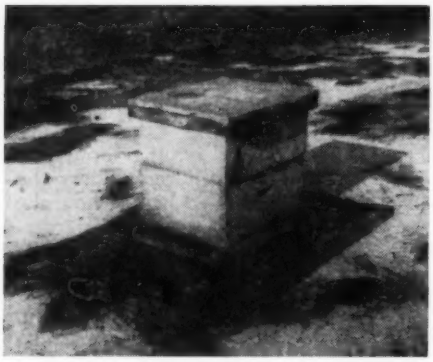
One of the big features of this vitex tree here as a honey plant, is its obvious quick growth. This spring one came up volunteer. By fall it was a two to three foot bushy topped plant covered with blooms. At frost I gathered quite a lot of seed from it, even though it wasn't yet a year old. I saved lots of seed from the two large trees and intend to try to propogate it here.

Melvin Pellett says they have had good success at Pellett Gardens by planting the seed in a seed bed, keeping it moist during germination time, which is from six to eight weeks, then transplanting the plants.

The seed has a hard shell. I have some seed soaked in water six weeks now and the shells are still hard. Perhaps the seed could be moist and allowed to freeze which would cause the seed to come up quicker when it is planted. I have done this with black walnuts and pecans.

While these two trees probably have drawn water from nearby flower beds that were watered during the dry weather and since they froze back only one year in the past seven years I think they would be hardy enough and suitable for this part of Oklahoma. Melvin Pellett says they freeze back every year at Pellett Gardens in Iowa.

From the articles I've read about vitex, they thrive best on low land with sufficient moisture and sunshine.



A piece of rubberoid placed under a hive keeps it moisture proof.

It's An Idea

To Moisture Proof Hives

MILTON STRICKER, Annandale, N. J.

IF YOUR COLONIES sit in damp areas, much moisture can be absorbed through the wooden bottom board. To combat this, place rubberoid underneath each hive. To keep water from lying on this rubberoid, place bricks under rubberoid at rear of colony.

This makes a nice home for ants, but at least you'll always know where said ants are in your apiary. Occasionally, not more than twice a year, lindane or chlordane can be sprinkled under the rubberoid.

A "Tin" Super

by C. D. CANNON, Warren, Pa.

JUST AFTER the end of World War II, it seemed likely that the great production of aluminum that the U. S. had achieved might be turned into other channels. The factory where I worked explored some of these and I received permission to have a super (half-depth) made for a trial. All work except the actual forming of the metal was done by myself and a very satisfactory super was produced. At that time, however, it could not be made at a price that was competitive with wood. It was very interesting and the bees accepted it without question; in fact, it is in use every summer.

As good clear lumber becomes scarcer and higher in price, it seems likely that a change to metal for the main parts of the hive will become practical and economical. If any beekeeper wishes to try it out, here are the details:

Since this started as a project to use aluminum, I selected some pieces of No. 24 ST Alclad sheets, .032 inch in thickness. Several other alloys of aluminum such as No. 52-S ½ hard would do equally well, or 22 gauge galvanized steel may be used. If you are located close to salt water, be sure to use "Alclad" or similar alloy sheets coated with pure aluminum to avoid severe corrosion. If the soft alloys 2-S or 3-S are used, the thickness should be at least .040 inch and the patterns and cutting size changed accordingly.

Wide flanges on all parts are necessary for strength when thin material is used. These were also put on so a piece of insulation such as celotex could be put on the outside if needed. All bolts should be zinc or cadmium plated to prevent corrosion or galvanic action with the aluminum. The half-depth super, empty, but with some propolis on it weighs one pound nine ounces. A wood super, with propolis weighed four pounds 15 ounces and a new super weighed four pounds nine ounces. The wood supers were painted, but the aluminum super was not.

As mentioned before, the bees have not seemed to object, and all has been O. K., but I suggest that such a super be kept out of direct, bright sunlight, as most all metals transmit heat rapidly.

Such a super is, of course, not subject to rot, and the bees cannot chew it. It requires no paint and can be assembled in a few minutes. The factory time required to manufacture it is small. I firmly believe that it will be only a few years until changing material costs will make metal supers, and probably entire hives a common sight in apiaries.

Kenneth Russell of Garner, Oregon, made these gabled roofs to keep his colonies cool during the hot summer months.

A Talk to Beekeepers

M. J. Deyell

Continued from the November Issue

My Eastern Trip

Since writing the November installment on my trip, I happened onto the following verse:

"A yearning to tell all about where he's been
Possesses each traveler's spirit
Until he discovers, when back home again
That no one is yearning to hear it."

I DO BELIEVE it contains more truth than poetry. Isn't it a fact that some of us are over-anxious to tell what we have done and seen, while others, being so busy with their own affairs, don't bother to listen to us? Some are kind enough to lend an ear and that tends to inflate our ego. I hope you readers may bear with me. I'll try to make the story as painless as possible.

On to Vermont

This is known as the Green Mountain State. The best farm land is found in the Champlain Valley where the underlying rock is limestone.

My first stop was at Middlebury, the home of Charles Mraz, the largest commercial beekeeper in the state. I enjoyed the hospitality of his home and accompanied him to some of his outapiaries. Honey crops in that area have been rather poor during the past few years but the season of 1954 will be recorded as one of the best. Mr. Mraz specializes in the production of individual chunk comb honey, put up in attractive packages with a net weight of two and one-half ounces. The quality of the honey is excellent.

Mr. Mraz has developed a novel method of getting the cut combs freed of liquid honey around the edges where combs are cut. He puts these combs onto a screen arrangement in the extractor which is run at slow motion until the combs are dry. Some let the combs drain over a screen with container below to catch the drip.

A new uptodate three-story honey house was built by Mr. Mraz this season. A picture of it will appear in a later issue.

Bird's-foot trefoil is being grown in that area and is proving to be a worthwhile source of nectar. The honey is white and heavy-bodied.

Chas. Mraz, Middlebury, Vt., standing beside one of his sky scraper hives.

My next call was on Clyde Wood, South Woodstock, Vermont. He operates about 50 colonies as a sideline and usually secures fairly good crops but this year the weather was unfavorable for nectar secretion.

Mr. Wood has developed a strain of dark bees which seem unusually well adapted to that section of Vermont, where the extremely cold weather makes wintering bees rather difficult.

One of Mr. Wood's hobbies is trapping foxes. He caught 30 last winter. He showed me a large lynx—a ferocious looking animal—preserved by a taxidermist.

MR. WOOD operates a garage near which he has built an attractive roadside honey house from which he sells the honey he produces. Anyone who lives such a diversified life would hardly trade his job for the Presidency of the United States. I wouldn't if I were in his shoes.

I wanted to meet Robert Mead, Apiary Inspector for Vermont, but had some difficulty finding him. I finally caught up with him when I called on Phil Townsend, Lebanon, New Hampshire, just over the state line. Mr. Mead is a very interesting person to visit with

and impressed me as one who knows his bees.

Phil Townsend is one of the largest beekeepers in New Hampshire and has some bees in the Champlain Valley in Vermont. His Vermont bees put up a good crop of honey this year, while his bees in New Hampshire did not do so well. The same was true of bees owned by Mr. Mead. Just why there is a difference in honey crops in localities so close together is a question the beekeepers in that area would like to have answered. The difference in soils may have something to do with it. From what I could gather, weather conditions were practically the same in both areas.

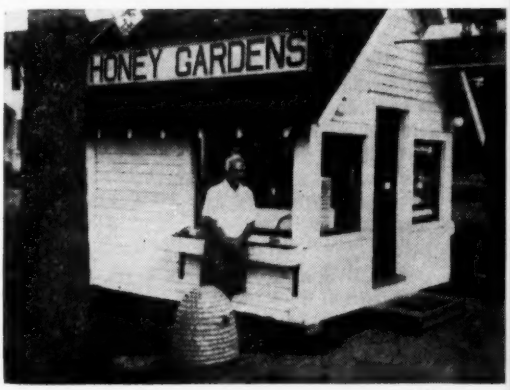
Mr. Townsend, with the help of his wife and daughter, operates a very attractive roadside honey stand, as shown in the accompanying picture. It is ideally located to attract tourists that frequent that part of the state. If any of you readers happen to be near Lebanon, New Hampshire, you should by all means pay a visit to Phil Townsend and ask him to show you his large book, "Audubon's Birds of America", published in 1876. This book is three and one-half feet long and two and one-third feet wide, one of the most remarkable books I have seen. The first page shows a life sized wild turkey in natural colors.

I was scheduled to attend a summer meeting in Northfield, New Hampshire, August 6th, and was invited by Prof. J. R. Hepler, of the University of New Hampshire, to spend the night with him, prior to the meeting. Durham, where Prof. J. R. Hepler lives, is a typical New England town. I had never been there and had to inquire where the Professor lived. I was parked on Main Street and saw a nice looking gentleman approaching me from the opposite side of the street. I asked him if he could direct me to Prof. Hepler's home. He thought for a minute, then said, "I could direct you but it would be simpler for me to drive to his home with you". So he got into his car and started off and I followed along. I have thought of that little incident many times. There was a man willing to go out of his way to do a service for a stranger. I wonder how many of us would actually do what he did. It is one thing to say that we should love our neighbors as ourselves but still another thing to actually do it.

Clyde Wood in one of his apiaries near South Woodstock, Vt.

How it Feels to be on TV

AFTER ARRIVING at Professor Hepler's home and enjoying a delicious dinner with the Hepler family I learned that he was planning to help out on a TV program at 9:30 that evening in Manchester. A friend of Prof. Hepler's, connected with the production and marketing of blueberries, invited the Professor to assist. I was



Phil Townsend beside his attractive roadside honey stand.

B & Z LIBRARY

Prof. J. R. Hepler, Durham, N. H., finding a queen at the Northfield meeting.

invited to go along. A sizeable station wagon was used to transport all of the paraphernalia needed on the show, such as blueberry plants, the apparatus for picking and cleaning them, etc.

Two people, including Prof. Hepler, carried on a dialogue explaining how blueberries are grown and prepared for market. I was asked to step into the spotlight near the end of the show to say a few words about bees and their importance in pollinating farm crops, including blueberries.

At the very end of the show, five of us sat at a table eating blueberry pie sweetened with honey, also large delicious blueberries with honey poured on them. This last act wasn't at all difficult for any of us.

The meeting of the New Hampshire beekeepers held at Northfield was quite well attended. Professor Hepler went through the process of introducing some queens. Fortunately, he was able to find the old queens without much trouble.

The beekeeper at whose apiary we met, wished to have one of his colonies divided, giving a queen to the queenless division. It was thought best by most of the experienced beekeepers present to defer dividing the colony until next spring at the beginning of the main honey flow. If the colony had been divided on August 7th, chances are that both divisions would be lost during the winter, whereas, leaving the colony undivided would help to insure successful wintering.

Providence, Rhode Island, Next Stop

A JOINT MEETING of the Rhode Island Beekeepers' Association and the Bristol County Beekeepers' Association of Massachusetts, was to be held in Bristol in a High School Auditorium on Sunday afternoon, August 8th. I arrived in Providence Saturday noon, August 7th, and hunted up William K. Davis who had invited me to his home. He is publicity man for the Rhode Island Association. He lives near the center of Providence and has a small

Howard A. Pike, state apiarist of Rhode Island.

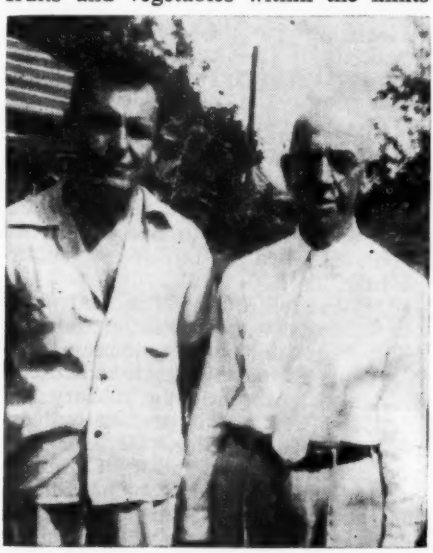
apiary which is so situated that the bees have to fly up and over a hedge and buildings and therefore do not bother people in the neighborhood. His bees have access to a considerable number of basswood trees, also patches of sweet clover growing in waste places around the city. His supers were quite well filled with white honey at the time and the flow was still on.

Bees Can Swim

Mr. Davis has a bird bath in the middle of his apiary. It was interesting to see the bees in a circle at the edge of the water quenching their thirst. Occasionally a bee would light in the center of the bird bath and swim to the edge of the water to safety, by turning over on its back and rotating its wings. I do not know whether the bee turned on its back purposely or accidentally. At any rate, that is the first time I had seen a bee swim. Perhaps some of you readers have already seen this.

The joint meeting held August 8th at Bristol High School was well attended. There are many backlot beekeepers in that area who derive a great deal of pleasure and some profit from their bees.

It is essential for the pollination of fruits and vegetables within the limits of cities and towns that bees are kept within flying distance of the blossoms to be pollinated.



Gaston Levitre, President of the Rhode Island Beekeepers' Association, and B. M. Bosworth, President of the Bristol County Beekeepers' Association.

Wm. K. Davis, Providence, R. I., showing a comb of white honey produced this season.

Since visiting Rhode Island. I had a letter from one beekeeper who was in the path of the hurricanes that visited that area r e c e n t l y. Hives were blown off their stands and supers scattered around. A rather humorous thing, this beekeeper said, was that one storm blew the vegetation until it leaned over almost touching the ground, then the next storm from the opposite direction blew the vegetation back up again a little beyond its normal position. I am thankful Carol did not hit while I was there. Just why these storms are given female names is something I have wondered about. I presume what Rudyard Kipling said is true, namely, "The female of the species is more deadly than the male".

(to be continued)

Our Cover Picture

This photo of the home apiary of The A. I. Root Co. was taken by John W. Buchanan of Medina, Ohio. The Root Company maintains more than 400 colonies for experimental purposes.

Oscar Wallace Park

DR. O. W. PARK passed away at the Mary Greeley Hospital, Ames, Iowa, in early afternoon of Saturday, October 16. He had suffered a heart attack just two weeks earlier and even though for awhile his life was despaired of, he seemed to make a remarkable rally and was thought to be making satisfactory recovery when he was suddenly taken from our midst.

Dr. Park was a world renowned authority in the life activities and habits of honey bees and had contributed greatly to the improvement of the honey bee stock through the development of disease-resistant lines. For many years he had led the research program in apiculture and directed the graduate program in beekeeping which had placed the Iowa State College among the top institutions of the country in these fields.

Dr. Park was born at Concordia, Kansas, January 14, 1889 and was a graduate of Concordia High School in 1908 and taught in the public schools of Cloud County, Kansas, for several years thereafter, serving as Principal of the Ward School at Concordia from 1912 to 1914. He received the Batchelor of Science degree from the Kansas State College, Manhattan, Kansas, in 1917. He was Assistant in Zoology at the Kansas Experiment Station from 1917 to 1918 when he came to Iowa as Assistant in Apiculture at the Iowa Experiment Station. He had remained at Iowa to the time of his death, except for a short stay at the University of Illinois. Dr. Park was granted the Master of Science degree from Iowa State in 1920 and the Doctor of Philosophy degree in 1924, being the first recipient of the Ph.D. degree granted in the Department of Zoology and Entomology at Iowa State.

Dr. Park was a member of Phi Kappa Phi, national honorary scholastic society, Sigma Xi, national honorary research society, and Gamma Sigma Delta, national honorary society of agriculture. His bibliography appears in American Men of Science, the Naturalists' Directory, Who's Who in Iowa, and Who Knows and What. He was the author of approximately 100 scientific and research publications that appeared in various professional journals and magazines. Also he had contributed leading chapters in outstanding apiculture books. He was a member of the Iowa Beekeepers' Association, The American Beekeeping Federation, the Iowa State Horticultural Society, the Iowa Academy of Science, The Entomological Society of America, American Association of University Professors, and American Association for the Advancement of Science.

George H. Vansell

IT IS with deep regret that I am reporting the sudden death of one of our outstanding teachers and research workers in beekeeping, Mr. George H. Vansell, who passed away suddenly on October 23, a short time after he was stricken with a heart attack. He had been in apparently good health up to the time he was stricken.

Van, as he was familiarly known to all of his friends and associates, was born in Muscotah, Kansas, on January 8, 1892. He graduated from Kansas University in 1915 and received his M.S. degree from the same institution in 1917. He had also taken graduate work at Harvard, California and Stanford in later years. He was a member of the faculty of the University of Kentucky from 1915 to 1922 and of the University of California from 1922 to 1931 when he resigned to accept a position with the United States Department of Agriculture in Bee Culture, at Davis. He held the rank of Apiculturist from 1942.

Mr. Vansell was a keen student of bee behavior with special reference to their nectar and pollen gathering activities but during his long and useful service to the beekeeping industry had carried on research in practically every phase of bee behavior. He knew the pollen and nectar plants of California better than any other person and was the author of "Nectar and Pollen Plants of California" as well as numerous other bulletins, circulars, scientific and popular articles on beekeeping. —J. E. Eckert.

Chicago's beautiful Michigan Avenue with its park on the Lake front offers many attractions for visitors to the city.—Photo by Kaufmann and Fabry Co., Chicago.

The Federation Convention at Chicago

THE PROGRAM for the Annual Convention of the **American Beekeeping Federation** to be held in Chicago January 25-28 is nearly complete. As previously announced the main theme is Marketing. Mr. S. Joaquin Watkins and Mr. Roy Grout have prepared a fine program. They have arranged for the leading marketing specialists in North America to appear on the marketing section of the program.

The research section presents the latest information on influence of soil fertility on legume seed production, new information on colony condition, and placement for effective pollination; the use of genetics in breeding a better bee and the latest research in handling honey by the beekeeper, packer, and commercial consumer. The latest research results in the use of antibiotics in controlling diseases are discussed by the men who have developed the research.

Mrs. Schaefer, President of the Ladies Auxiliary has announced an interesting program and social gathering for the ladies.

The "500" club will have its usual instructive meeting. A group of noncommercial beekeepers has requested a special meeting for one of the evenings.

The Honey Advisory Council will report on its achievements in a special meeting.

Every effort is being made to make this convention as interesting and informative as possible. — Newman I. Lyle, Chairman Program Committee, American Beekeeping Federation.

Just News

The **Westchester County Beekeepers' Association** will hold its next meeting at 2:30 P.M. Sunday, Dec. 19th at the Odd Fellows Hall, 20 Lockwood Ave., New Rochelle, N. Y. At this time we will have our Xmas party. Movies will be shown, refreshments will be served. All beekeepers and their friends are invited.—Carlton E. Slater, Publicity.

The next meeting of the **Middlesex County Beekeepers' Association (Mass.)** is scheduled for Saturday, December 18, at the Waltham Field Station. Inasmuch as this will be our Christmas meeting, arrangements are being made for an exchange of small gifts among the members.

Because of the many requests the Association receives to present bee exhibits for various organizations, a committee has been established to plan and produce both indoor and outdoor exhibits which can be used when such requests are received. The Association feels that the efforts of the committee will be most worthwhile in presenting to the public information on bees and beekeeping.—L. C. Proctor, Sec.

The **annual meeting of the California Beekeepers' Association** will be held Dec. 7, 8, and 9 at the Hotel el Tejon in Bakersfield. The program will be centered on pollination, desired changes in bee laws, marketing, pesticide programs, and problems of apiary management.

The **Michigan Beekeepers' Association** will hold its annual business meeting at 10 a.m., Saturday, Dec. 11, in Room 33 of the Union Building at Michigan State College, East Lansing.

Florida Plans a Honey Department at State Fair.—Seven classes of honey exhibits will be opened to Florida beekeepers at their 50th Annual State Fair, February 5th to 19th, 1955 at Tampa. This famous honey show is under the auspices of the Florida State Beekeepers' Association.

Four of the classes will be grouped under "Cooking Contest" and are under the direction of the Tampa Bay Beekeepers' Auxiliary, who are cooperating with the state association. Confections, breads, cakes, and cookies all made with honey are included in this group.

The **Southern Tier Beekeepers' Association** will hold its next meeting on Tuesday, Dec. 14, at 8 o'clock at the C. L. Reynolds Radio and Appliance salesroom, 25-27 Sturgis St., Binghamton, N. Y. A light lunch will be served. All are expected to bring cake, cookies, doughnuts, or sandwiches. This is election-of-officers month and all should attend. A picture will be shown entitled "The Indispensible Honeybee". —Howard B. Webb, Sec.

The **Ohio State Beekeepers' Association** will hold their regular business meeting in Columbus, Ohio, Dec. 6, at the State Office Building. The meeting will start at 9:30 sharp and close at 4:30. Lots of good eating places near by so bring the Mrs. and plan to attend this important meeting. Door prizes and Xmas chickens. Bee seeing you.—R. L. Livermore, Sec.-Treas.

The **Colorado Beekeepers' Association** will hold its annual convention at the Auditorium Hotel, in Denver, Colorado, Dec. 13 and 14.—G. H. Rose, Program Chairman.

A big turnout is expected at the annual meeting of the **American Bee Breeders' Association** on January 8th at Hattiesburg, Miss. Some of the outstanding speakers on the program will be N. C. Jensen, Macon, Miss., M. S. Fortune, Mayhew, Miss., G. H. Cale, Jr., Hamilton, Ill., and E. C. Bessonett, Donaldsonville, La.

Ralph Kelly, in his column, "Lighter Side", which appeared in the October 8 issue of The Cleveland News, gives a new use for beeswax. He reported, "Esther Williams, the swimming star, now at the Palace, discloses an important secret to ladies who wish to be well groomed even under water,—keep the hair back with beeswax."

"Portugal.—A swarm of bees literally stopped an express train between

Lisbon and Oporto. When the switchman tried to throw the switch signalling the right of way to the speeding train the apparatus jammed and the express ground to an emergency halt. The switchman found that a swarm of bees had turned the inside of the metal signal block into a hive".—From August 1954 "South African Bee Journal".

USDA Announces 1954 Yearbook of Agriculture, Entitled "Marketing": The U. S. Department of Agriculture has announced the publication of its 1954 Yearbook of Agriculture, a 520-page volume packed with facts about the complex system that brings American farm products to their users.

Entitled **Marketing,** the book comprises 18 sections and 88 chapters and was written by 117 marketing specialists, most of whom are employees of the Department and of agricultural colleges.

A Congressional document, the Yearbook is distributed mainly by Members of the Congress. It also is sold by the Superintendent of Documents, Government Printing Office, Washington 25, D. C., at $1.75 a copy. The Department of Agriculture has no copies for general distribution.

This peaceful looking apiary belongs to G. L. Hankamer of Belleville, Ills.

Colorado Condemns Michigan Bee Law

"THE MICHIGAN supreme court recently upheld the law prohibiting the bringing of bees into the state on combs, used hives, or used apiary appliances from any other states or other countries. However, common carriers may transport bees and apiary appliances through this state if the shipment originated outside the state and is destined for some point outside of it.

"So, thus is added another sad page in American beekeeping history. Under the name of disease control, more regulations which will hamper the beekeeping industry of America, are upheld by a high court. Unfortunately this type of legislation which tends to reduce interstate movements of goods and supplies has become increasingly common in the past few years. One of the worst economic disasters that could befall our country is for it to be divided into 48 distinct economic units (states) with the accompanying embargoes, tarriffs, and regulations. Let's not divide into 48 economic islands because we think we can momentarily gain an advantage. This advantage will surely boomerang on us. Let's remain one strong economically united country."—Colorado "B" Notes, Nov. 1954.

B & Z LIBRARY

Buy and Sell

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate: 15c per counted word, each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in by the 10th of the month preceding publication.

HONEY FOR SALE

WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. The Hubbard Apiaries, Onsted, Michigan.

IOWA honey, one can or truck loads. Russell D. Smalley, Beaver, Iowa.

CLOVER extracted honey in sixties. Abram Brubaker, Lancaster, Pa., Rt. 2.

Light clover honey. 60's, $10.20; 10, $9.90 each. Harris Bee Supply, Jackson, Tenn.

HONEY FOR SALE. Write for prices. Lloyd E. Allen, Tipton, Mich.

FINE QUALITY Chunk Comb Honey in one pound jars. Hiltner's Apiaries, North Creek, Ohio.

ASK FOR SAMPLE and price Water White Clover Honey. The Hubbard Apiaries, Mfgrs. Bee Supplies & Comb Foundation, Onsted. Michigan.

300 gallons of old honey for sale, $100 F.O.B. El Campo, all in gallon jugs. Theo. Pfeffer, 309 Hoskin, El Campo, Texas.

CLOVER HONEY, white extracted, 18c per pound in 60-pound cans. Lose Brothers, 206 E. Jefferson, Louisville, Ky.

PROFESSOR LUERSSEN'S white clover honey in new 60's. Triple filtered, pasteurized, priced right. 1301 E. Washington, Bloomington, Ill.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTICE—We can not guarantee honey buyers' financial responsibility, and advise all beekeepers to sell for cash only or on C.O.D. terms except where the buyer has thoroughly established his credit with the seller.

CASH for your comb honey and all types extracted. Send sample and best price. Buckeye Honey Co., 3930 No. High St., Columbus 14, Ohio.

CASH for Beeswax. Write as to quantity and we will quote price. Muench-Kreuzer Candle Co., Inc., Syracuse, N. Y.

HONEY WANTED — All grades and varieties. Highest cash prices paid. Mail samples. State quantity. HAMILTON & COMPANY, 2613 South Yates Ave., Los Angeles 22, California.

WRITE FOR shipping tags and quotations on rendered beeswax. We buy from one pound up and if you have over 25 pounds let us work it into foundation for you at a 25 per cent saving. Walter T. Kelley Co., Clarkson, Kentucky.

CASH FOR YOUR HONEY—Light extracted or comb. Regular trade send sample. W. R. Moomaw, Stone Creek, O.

HONEY WANTED for cash. All grades. Good used cans for sale or trade for honey. John Tideswell, 2711 North 63 St., Omaha, Nebraska.

WANTED — White extracted or comb honey. Send sample. Millersport Honey Co., Millersport, Ohio.

HONEY WANTED, all grades in 60's. Mail samples, advise quantity, best price. A. I. Root Company of Syracuse, 1112-14 E. Erie Blvd., Syracuse, N. Y.

WANTED—Light amber-clover and fall-flowers honey. Cloverdale Honey Co., Fredonia, N. Y.

BEST CASH DEAL for your honey (any grade) and beeswax. Alexander Company, 819 Reynolds Road, Toledo, Ohio.

WANTED—white and amber extracted honey, car loads or less. Write, stating best price. Honeymoon Products Co., 39 E. Henry St., River Rouge, Mich.

WANTED—Buckwheat honey. Eastern Food Products, 115 Division Ave., Brooklyn, N. Y.

All kinds honey wanted. Wm. March, R. D. 3, Mantua, Ohio.

WANTED: All grades of extracted honey. Send sample and price. Deer Creek Honey Farms, London, Ohio.

WILL BUY two carloads fancy white honey. Send sample and quote. Maxwell's, Berryville, Va.

FOR SALE

QUEENBEE PAINTING OUTFITS, $1.50 postpaid. Southwick Apiaries. Waban, Massachusetts.

WRITE FOR CATALOG — Quality Bee supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries. Manufacturers of Beekeepers' Supplies and Comb Foundation. Onsted, Michigan.

THE BIGGEST BEE SUPPLY Catalog published (64 pages) free for the asking. Listing many items not found in other Catalogs. No agents—buy direct and save 20%. WALTER T. KELLEY CO., CLARKSON, KENTUCKY.

FOR SALE — New heart cypress 10-frame bottom boards. K.D., 10 or more, $1.00 each; 50 or more, 90 cents each; 100 or more, 85 cents each. One nailed up sample postpaid, $1.25. Fred L. Poole, Elizabethtown, Rt. 2, Box 67, No. Car.

NOW AVAILABLE, Fumigil for control of Nosema disease in bees. Write for prices and circular by Abbott's Laboratories. PRAIRIE VIEW HONEY CO., 12303 12th Street, Detroit 6, Michigan.

WINTER CASES, 50 two-colony packing, in good condition. Ray Wilcox, Odessa, New York.

FOR SALE — 1000 eight-frame supers with frames. Sterilized. In very good condition. E. H. Wadleigh, Monte Vista, Colorado.

FOR SALE — 75 hive bodies with crimp wired comb, 20 shallows, 30 each bottoms and covers. Clean and in excellent condition. Gerald Truman, Chester, Iowa.

QUEEN REARING and package bee equipment, Box 388, Picayune, Miss.

BEES AND QUEENS FOR SALE

We use all possible care in accepting advertisements but we cannot be held responsible in case disease occurs among bees sold or if dissatisfaction occurs. We suggest that prospective buyers ask for a certificate of inspection as a matter of precaution.

CAUCASIANS. 2-lb. pkg., $3.00; 3-lb. pkg., $4.00. Untested queens, $1.00 each; 100, $75.00. Lewis & Tillery Bee Co., Greenville, Ala.

ITALIAN PACKAGE BEES, QUEENS: Bargain grade beekeepers' supplies. Circular. Crenshaw County Apiaries, Rutledge, Ala.

STANDARD 8 or 10-frame two-story strong colonies for May or June delivery. Reasonable terms.—Eugene Walker, Rt. 2, Box 207, Live Oak, Calif.

FOR SALE: Our entire outfit. 650 or more colonies in two-story deep standard equipment, 45-frame extractors, boiler, etc., honey extracting plant if wanted, equipment for 700 colonies, very good combs. All must go. Our bait business has gotten to the point where we must sell the bees. Fred Gould & Sons, Angola, Indiana.

THREE-BANDED bees and queens, of two extra good races—the Dadant's Starline and our regular strain. Bred in separate yards. Write for prices. Alamance Bee Company, Graham, North Carolina.

HELP WANTED

HELP WANTED: for 1955. Give experience, references, age and height. Do not apply if you drink. Also: Bees on share basis to right party. Howard Weaver, Navasota, Texas.

EXPERIENCED QUEEN BREEDER and package producer to manage successful going business in South. Answer in own handwriting stating wages expected, care of Breeder, this magazine. All replies confidential.

SEEDS

HONEY PLANTS our specialty. Catalog on request. Pellett Gardens, Atlantic, Iowa.

MISCELLANEOUS

Bargains in new or used honey cans or Root Supplies for cash or honey. Buckeye Honey Company, 3930 N. High St., Columbus 14, Ohio.

HONEY WANTED
Carloads and less than carloads. Mail sample and best prices in all grades.
C. W. AEPPLER COMPANY
Oconomowoc, Wisconsin

ITALIAN
Package Bees and Queens
Jackson Apiaries
Box 58 Funston, Ga.

ITALIAN QUEENS
and
PACKAGE BEES
W. E. PLANT
Hattiesburg, Mississippi

Italian Queens
EUGENE WALKER
Rt. 2, Box 207
Live Oak, California

GIRARDEAU APIARIES
Tifton, Georgia
Shippers of
ITALIAN
Package Bees and Queens

PACKAGE BEES & QUEENS
"Italians"
Quality Does Not Cost—It Pays
THE WILBANKS APIARIES
Claxton, Georgia

HONEY LABELS
Improved designs, embodying color, balance, simplicity, and distinction. Please send for free samples & prices.
C. W. AEPPLER COMPANY
Oconomowoc, Wisconsin

Wishing you and yours
A
VERY
MERRY
CHRISTMAS
and a
WONDERFUL
NEXT YEAR

Remember us for
BEES
and
QUEENS

The Stover Apiaries

Mayhew, Mississippi

MERRY CHRISTMAS
to all
MITCHELL'S APIARIES
Bunkie, La.

Good Italian Queens
In season
White Pine Bee Farms
Rockton, Pa.

PINKING SHEARS — ONLY $1.95 postpaid. Chromium plated, precision made. Manufacturer's Christmas Overstock. Guaranteed $7.95 value or money refunded. Order by mail. Lincoln Surplus Sales, 1704 W. Farwell Ave., Chicago 26, Illinois

Tested formula for a new kind light pure bee honey which makes it much different in Taste and Aroma and far superior in Health quality. This improved honey has a new and strong sales appeal. Exclusive rights to formula and all sales territory east or west of Mississippi river. Price $950. R. Linse, 5518 North 6, Philadelphia, Pa.

MAGAZINES

Know interesting facts concerning the bees of India through the INDIAN BEE JOURNAL, published in English by the Bhupen Apiaries (Himalayas), Ramgarrh Dist. Naini Tal, U. P. India, or available through them. Subs. Rs9/ or 15 shillings or $2.25 yearly. Sample copy post free for Rs$^1/_8$/, or s2/6, or 40 cents (International Money Order). Payment in mint postage stamps of your country accepted.

ARCHIVE of BEE SCIENCE (Archive fur Bienenkunde), oldest scientific, independent bee journal in the world. Select feature material gives lasting theoretical and practical knowledge. Sample copies available. Two large 1953 editions for the low price of DM 5.50. Biene-Verlag (Bee Publishers), Lindau (B), Postcheck Karlsruhe 5581, Germany.

BEE WORLD, the international journal of the Bee Research Association, published monthly, contains the latest research reports on bees and beekeeping. With Apicultural Abstracts it costs $3.00 per annum. Apicultural Abstracts only $1.75 per annum from the Hon. Subscription Secretary, Bee Research Association, 10 Barnett Wood Lane, ASHTEAD, Surrey, England.

Read the South African Bee Journal. Published every two months. Subscription 7/6 per year to the Treasurer, P. O. Box 3306, Cape Town, South Africa.

INTERESTED in Angora Goats? Read the Sheep and Goat Raiser, Hotel Cactus, San Angelo, Texas, the only ranch magazine published serving the Angora Goat industry. Subscription $1.00. Sample copy, fifteen cents.

PROTECT YOUR FUTURE. BUY YOUR SAVINGS BONDS NOW.

YORK'S QUALITY BRED BEES AND QUEENS
DADANT STARLINES **YORK'S ITALIANS**
The Strains that Leading Honey Producers Prefer

DADANT'S STARLINE HYBRIDS
Reg. U.S. Pat. Off.

Whether your requirements are for one package or for a truckload, you will find our facilities among the best. With 10,000 colonies to draw from and three package producing outfits, we can load average sized trucks in one day while maintaining parcel post and express schedules.
We are now booking orders and making truck loading arrangements. Write us now for further information on the 1955 season.

YORK BEE COMPANY Jesup, Georgia U.S.A.
(The Universal Apiaries)

RECLAIMING COMBS INFECTED WITH A.F.B.

(Continued from page 723)

need not require more time than is needed to establish a new colony on fully drawn combs under similar conditions. The expense of labor and materials used in the process need be no greater, if as great, as the costs of destruction and replacement of the equipment and then the establishment of new colonies. Without medication, there is no guarantee that the new colonies will not become infected from some outside source at any time.

The practice of burning will not eliminate disease from a given region unless all colonies in the region are thoroughly inspected (including those in trees and buildings). It has not done so in the past 30 or more years and in the present day of limited inspections from official sources, it seems highly desirable to use all known means of aiding in the elimination of bee diseases.

The use of medicants in disease control should be carried on in an intelligent manner and, preferably, under officially recognized conditions which are in accord with the economics of the beekeeping industry. Medicants will not eliminate the need for periodic inspections or other good, sound fundamental beekeeping practices. If a beekeeper does not have AFB or EFB in his outfit, or is not exposed to either, there is no logical reason why he should use it, even as a preventive.

Of course, the methods can be abused, but when intelligently applied, the results are as positive as any method used in the control of any disease and will not "cover up" the disease or contaminate the most delectable natural food product—honey. Beekeepers in increasing numbers are going to use the proven methods of disease control as fast as they learn about them and as the need arises.

So, why shouldn't our state bee laws be changed to recognize the practical value of these control measures so they can be carried on in a logical manner?

CHRISTMAS GREETINGS

Our wish to you is a Happy Joyful Christmas.
Though this world is full of sorrow and grief there is always that knowledge of comfort and joy taught by the One whose birthday we celebrate at this season. May we serve Him better in all our remaining time on this earth.

For Package Bees and Queens in '55, let us serve you.

Rossman Apiaries

P. O. Box 133
Moultrie, Ga.

"GULF BREEZE"
PACKAGE BEES QUEENS

If you need from one to a truck load of packages, or any number of queens during 1955, book your order with us.

BESSONET BEE COMPANY
DONALDSONVILLE, LA.

JOHN DAVIS QUEENS

We ship until November 1 and fall is the right time to requeen. Order now and be sure. $1.00 each, any number.

LITTLE'S APIARIES
Shelbyville, Box 122, Tenn.

If you are taking time to read, why not read the best? Condensed to save you time. Illustrated to give you pleasure.

Modern Beekeeping
The Picture Bee Magazine
Box 210 Clarkson, Kentucky

U. S. Savings Bonds come in all sizes . . . . .
and grow bigger every year.

Just Published

A HONEY OF A BOOK!

ADVENTURES IN BEEKEEPING

by Robert D. Oglesby

Here is the exciting, eight-year record of an apiarist who not only collected honey — and stings — but also carefully noted the puzzling and fascinating antics of his bees. Every beekeeper will find many practical, profitable tips here. Farmers and nature lovers will enjoy Mr. Oglesby's humor, anecdotes and delightful comments about beekeeping. Don't fail to read **Adventures in Beekeeping.** Only $2.00. **Money back in 5 days if not delighted.**

Order from:

VANTAGE PRESS, INC.

Publishers

120 W. 31 St. New York 1, N. Y.

Merry CHRISTMAS

I want to take this opportunity to thank my customers for the splendid business they gave me this past season. Wishing everyone a **Merry Christmas** and a **Prosperous New Year.**

Looking forward to serving you again the coming year with better bees and better service.

Write for prices on packege bees either Italian or Caucasian.

FARRIS HOMAN

Shannon, Miss.

Booking orders now. Over 30 years a shipper. Send for Free Circulars.

BLUE BONNET APIARIES

Weslaco, Texas

High Quality Italian Queens

By Airmail

75c each. 10 or more, 65c each.

CARLUS T. HARPER

New Brockton, Ala.

LET'S TALK ABOUT HONEY PLANTS

(Continued from page 738)

whose family has been keeping bees for generations. He reported that southern Maine had been too cold and wet for a good honey flow. Roy showed me a row of bottles of blueberry honey which he had received from R. B. Swan and Son of Brewer. In the southeastern part of the state of Maine, there are thousands of acres of blueberry barrens which are operated for commercial canneries. They claim that 90 per cent of the blueberries of the United States are canned in Maine. The honey is clear and nearly as light as clover with a delightful flavor of its own which is slightly reminiscent of blueberries.

California. L. B. Crawford of Santa Ana writes that orange honey is his main crop and that it rarely fails to yield. He describes the honey as "white with a highly aromatic flavor that is hard to beat". He adds, "I have seen honey flows on orange that were terrific. My scale colony gained 63 pounds in three days on one occasion."

Florida. W. C. Page of Lake City has recently sent me two bottles of honey. The one from gallberry has a most delightful aromatic flavor which one has to eat for a while to appreciate. It has a light yellowish amber honey with a good body. Robert Foster, the retired inspector, told me at Gainesville that after trying all the honeys produced in the southeastern states, he liked gallberry the best. The other bottle received from Mr. Page is an unknown which he writes may have come from Mexican clover or partridge-pea.

Package Bees & Queens

Quality & Service

C. F. KOEHNEN & SONS

Glenn, California

Canada's

National Monthly Magazine for Beekeepers

Canadian Bee Journal

Streetsville, Ontario, Canada

We wish to thank our many customers for their kindness this past season and wish for you a very **Merry Christmas** and a **Happy** and prosperous **New Year.**

Quality Bred Italian Queens will be ready March 10th. Will have packages for sale this season. Ask for prices delivered by truck to your door.

Walter D. Leverette Apiaries
P. O. Box 364 Ft. Pierce, Fla.

BETTER BRED QUEENS
Three Banded Italians
We wish to thank our many customers for the business they have given us this year. Hoping to serve you in 1955.
CALVERT APIARIES **Calvert, Ala.**

J. E. WING & SONS
41 Years Continuous Service
Italian Package Bees and Queens
Our Specialty
Knights Landing, Calif.

HANDLING AND PROCESSING HONEY

(Continued from page 730)

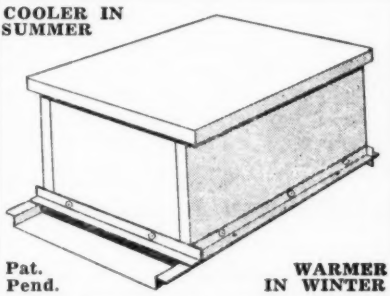
family many times. Children go for it in a big way, and older folks, also.

The real drawback to this dispenser is the high cost of the containers and this makes the package retail at about 49 cents each. And to sell it, even at this price, we have to purchase large lots of them at a time. Then, another drawback is that the decorating is done at another factory in a different city. This makes a lot of handling and is quite an involved process.

The wholesalers do not like to stock high-cost items, and for this reason there is a lot of resistance to introducing this package.

The containers also have a rather milky appearance and they do not look as attractive when filled with honey as the glass. However, this does not seem to be much of a drawback. Where they are displayed in a retail store they sell quite readily and do a big repeat business. And, as before stated, they are so easy to use that a family will use much more honey wherever they are tried.

COOLER IN SUMMER



Pat. Pend. **WARMER IN WINTER**

UNI-TEMP ALUMINUM HIVE
Dealer Inquiries Invited.
The A. H. HALE CO.
Hapeville, Georgia, U.S.A.

CAUCASIAN BEES and QUEENS for 1955

Thanks to my many friends and customers who sent their orders my way.

Howard Weaver
Navasota, Texas

FLOWERS' QUALITY ITALIANS
We thank you for the large queen and package business given us this past season. We are preparing to serve you better next season with more and better queens, since we have one of the best queen breeders anywhere.
Let us hear from you early because we are partly booked now.
FLOWERS BEE COMPANY
Jesup, Georgia U.S.A.

U. S. Savings Bonds come in all sizes . . . . .and grow bigger every year.

THE AUSTRALASIAN BEEKEEPER
The senior beekeeping journal of the Southern Hemisphere provides a complete cover of all beekeeping topics in one of the world's largest honey producing countries. Published monthly by Pender Bros. Pty. Ltd., Box 20, P. O., Maitland, 3N, N.S.W., Australia. Subscription by Bank Draft or International M. O. 18/- (approx. $2.15) per year, post free. Sample copy free on request.

-:Sincerest Greetings:-

Reg. U.S. Pat. Off.

This is to thank our many customers and friends for the nice business sent to us the past season.
We are looking forward to serving you again in 1955 with the best there is in Honey Bees — Dadant's Starline Hybrids and GARON'S Three-Banded Italians. 27 years experience.

GARON BEE COMPANY **Donaldsonville, La.**

SEASON'S GREETINGS

Reg. U. S. Pat. Off.

Another year passes off our stage of action. With its ups, or downs, we should be better prepared to face the years ahead courageously. Bees have a way of making us look forward and upward, and though we sometimes see dimly, we are taking our cue from them in making our plans to serve you better in 1955 than ever before.
We want to thank our many friends for the privilege we have enjoyed in serving you in our humble way through the years. In the Holiday Season may your joys be full, and your hopes fulfilled.

JENSEN'S APIARIES **Macon, Mississippi** **U. S. A.**

"The Australian Bee Journal"
Published by the Victorian Apiarists' Association at the beginning of each month.
Subscription 10/-per annum plus 2/6 postage to oversea countries.
Address 112 Whitehorse Rd. Ringwood, Victoria, Australia

Prepare for the Future . . . .
Buy U. S. Savings Bonds
They come in all sizes . . . .
and grow bigger every year.

Index to Display Advertisers

Aeppler Co., C. W. 755
American Bee Journal 708
Australasian Beekeeper 759
Australian Bee Journal 760
Bessonet Bee Co. 757
B. L. M. Mfg. Co. 710
Blue Bonnet Apiaries 758
British Bee Journal 708
Bryant & Sawyer 706
Burleson & Son, T. W. 711
Calvert Apiaries 759
Canadian Bee Journal 758
Chrysler & Son, W. A. 711
Colorado Honey Administrative Com. 708
Dadant & Sons ....Inside front cover
Flowers Bee Co. 759
Garon Bee Co. 760
Girardeau Apiaries 755
Hale Co., The A. H. 759
Harper, Carlus T. 758
Hazel-Atlas Glass Co. ....Inside back cover
Homan, Farris 758
Honey Sales Co. 708
Hubbard Apiaries 710
Hutchison Mfg. Co. 711
Jackson Apiaries 755
Jensen's Apiaries 760
Jepson, H. H. 708
Kelley Co., Walter T. 711
Koehnen & Sons, C. F. 758
Leahy Mfg. Co. 710
Leverette, Walter D. 759
Little's Apiaries 757
Lotz Co., August 707
McCord Mfg. Co. 710
Marshfield Mfg. Co. 710
Miller's Honey Co. 706
Mitchell's Apiaries 756
Modern Beekeeping 757
Muth Co., The Fred W. 706
New Zealand Beekeeper 708
Plant, W. E. 755
Prairie View Honey Co. 707
Root Co., A. I. ....Back cover, 712
Root Co. of Syracuse, A. I. 706
Rossman Apiaries 757
Schmidt Apiaries 707
Sioux Honey Association 711
Stoller Honey Farms 711
Stover Apiaries 756
Tennessee Bee & Honey Co 706
Twist, Scott 706
Vantage Press, Inc. 758
Walker, Eugene 755
Wax Workers 706
Weaver, Howard 759
White Pine Bee Farms 756
Wilbanks Apiaries 755
Williams Bros. Mfg. Co. 707
Wing & Sons, J. E. 759
Woodman Co., A. G. 708
Yates, Inc., A. W. 707
York Bee Co. 756